

SEP 20 2004

<110> Zhong et al.

<120> THERAPEUTIC POLYPEPTIDES, NUCLEIC ACIDS ENCODING SAME, AND METHODS OF USE

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Glu Arg Gly Gly His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala	
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Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn
100 105 110
Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser Asn Asp Asp Glu
115 120 125
Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln
130 135 140
Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu Lys Lys Leu His
145 150 155 160
Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys Pro Ala Ala Gly
165 170 175
Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly Gln Ala Phe His
180 185 190
Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser
195 200 205
Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Thr Tyr Thr Cys
210 215 220
Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn Tyr Leu Leu Asp
225 230 235 240
Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
245 250 255
Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu Leu Leu Cys Lys
260 265 270
Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys Arg Ile Val
275 280 285

Ile	Asn	Gly	Ser	Ser	Phe	Gly	Ala	Asp	Gly	Phe	Pro	Tyr	Val	Gln	Val	290	295	300
Leu	Lys	Thr	Ala	Asp	Ile	Asn	Ser	Ser	Glu	Val	Glu	Val	Leu	Tyr	Leu	305	310	315
Arg	Asn	Val	Ser	Ala	Glu	Asp	Ala	Gly	Glu	Tyr	Thr	Cys	Leu	Ala	Gly	325	330	335
Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu	Thr	Val	Leu	Pro	340	345	350
Val	Arg	Gly	Gln	Arg	Arg	Thr	Pro	His	Gly	Pro	Gln	Gln	Arg	Pro	Arg	355	360	365
Pro	Gly	Ile	Arg	Thr	Ser	Ser	Cys	Thr	Arg	Arg	Ala	Pro	Trp	Pro	Trp	370	375	380
Leu	Cys	Ser	Cys	Cys	Trp	Pro	Gly	Cys	Ile	Glu	Gly	Arg	Arg	Ser	Thr	385	390	395
Ala	Gly	Thr	Pro	Ala	Arg	Pro	Pro	Leu	Cys	Arg	Ser	Ser	Pro	Ala	Ser	405	410	415
Leu	Trp	Pro	Asp	Ser	Ser	Pro	Trp	Ser	Gln	Ala	Leu	Pro	Ala	Ser	Gln	420	425	430
Ala	His	Pro	Trp	Tyr	Glu	Ala	Cys	Val	Ser	Pro	Pro	Ala	Ala	Pro	Pro	435	440	445
Cys	Ser	Pro	Ala	Ser	Leu	Val	Leu	Gly	Lys	Pro	Leu	Gly	Glu	Gly	Cys	450	455	460
Phe	Gly	Gln	Val	Val	Arg	Ala	Glu	Ala	Phe	Gly	Met	Asp	Pro	Ala	Arg	465	470	475
Pro	Asp	Gln	Ala	Ser	Thr	Val	Ala	Val	Lys	Met	Leu	Lys	Asp	Asn	Ala	485	490	495
Ser	Asp	Lys	Asp	Leu	Ala	Asp	Leu	Val	Ser	Glu	Met	Glu	Val	Met	Lys	500	505	510
Leu	Ile	Gly	Arg	His	Lys	Asn	Ile	Ile	Asn	Leu	Leu	Gly	Val	Cys	Thr	515	520	525
Gln	Glu	Gly	Pro	Leu	Tyr	Val	Ile	Val	Glu	Cys	Ala	Ala	Lys	Gly	Asn	530	535	540
Leu	Arg	Glu	Phe	Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly	Pro	Asp	Leu	Ser	545	550	555
Pro	Asp	Gly	Pro	Arg	Ser	Ser	Glu	Gly	Pro	Leu	Ser	Phe	Pro	Val	Leu	565	570	575
Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Gln	Tyr	Leu	Glu	Ser	580	585	590
Arg	Lys	Cys	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Val	Leu	Val	Thr	595	600	605
Glu	Asp	Asn	Val	Met	Lys	Ile	Ala	Asp	Phe	Gly	Leu	Ala	Arg	Gly	Val	610	615	620

His	His	Ile	Asp	Tyr	Tyr	Lys	Lys	Thr	Ser	Asn	Gly	Arg	Leu	Pro	Val
625					630					635					640
Lys	Trp	Met	Ala	Pro	Glu	Ala	Leu	Phe	Asp	Arg	Val	Tyr	Thr	His	Gln
			645						650					655	
Ser	Asp	Val	Trp	Ser	Phe	Gly	Ile	Pro	Leu	Trp	Glu	Ile	Phe	Thr	Leu
		660						665					670		
Gly	Gly	Ser	Pro	Tyr	Pro	Gly	Ile	Pro	Val	Glu	Glu	Leu	Phe	Ser	Leu
		675					680					685			
Leu	Arg	Glu	Gly	His	Arg	Met	Asp	Arg	Pro	Pro	His	Cys	Pro	Pro	Glu
	690					695					700				
Leu	Tyr	Gly	Leu	Met	Arg	Glu	Cys	Trp	His	Ala	Ala	Pro	Ser	Gln	Arg
705				710						715					720
Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Ala	Leu	Asp	Lys	Val	Leu	Leu	Ala
			725						730					735	
Val	Ser	Glu	Glu	Tyr	Leu	Asp	Leu	Arg	Leu	Thr	Phe	Gly	Pro	Tyr	Ser
			740					745					750		
Pro	Ser	Gly	Gly	Asp	Ala	Ser	Ser	Thr	Cys	Ser	Ser	Ser	Asp	Ser	Val
		755					760					765			
Phe	Ser	His	Asp	Pro	Leu	Pro	Leu	Gly	Ser	Ser	Ser	Phe	Pro	Phe	Gly
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Ser	Gly	Val	Gln	Thr											
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agt	gtg	cct	ggg	cct	cca	gtc	tgc	tcc	ctg	gag	gcc	tct	gag	gaa	gtg	100
Ser	Val	Pro	Gly	Pro	Pro	Val	Ser	Ser	Leu	Glu	Ala	Ser	Glu	Glu	Val	
		15				20					25					

gag	ctt	gag	ccc	tgc	ctg	gct	ccc	agc	ctg	gag	cag	caa	gag	cag	gag	148
Glu	Leu	Glu	Pro	Cys	Leu	Ala	Pro	Ser	Leu	Glu	Gln	Gln	Glu	Gln	Glu	
	30					35					40					

ctg	aca	gta	gcc	ctt	ggg	cag	cct	gtg	cgg	ctg	tgc	tgt	ggg	cgg	gct	196
Leu	Thr	Val	Ala	Leu	Gly	Gln	Pro	Val	Arg	Leu	Cys	Cys	Gly	Arg	Ala	
	45					50				55					60	

gag	cgt	ggt	ggc	cac	tgg	tac	aag	gag	ggc	agt	cgc	ctg	gca	cct	gct	244
Glu	Arg	Gly	Gly	His	Trp	Tyr	Lys	Glu	Gly	Ser	Arg	Leu	Ala	Pro	Ala	
				65					70					75		
									22							

ggc cgt gta cgg ggc tgg agg ggc cgc cta gag att gcc agc ttc cta	292
Gly Arg Val Arg Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu	
80 85 90	
cct gag gat gct ggc cgc tac ctc tgc ccg gca cga ggc tcc atg atc	340
Pro Glu Asp Ala Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile	
95 100 105	
gtc ctg cag aat ctc acc ttg att aca ggt gac tcc ttg acc tcc agc	388
Val Leu Gln Asn Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser	
110 115 120	
aac gat gat gag gac ccc gag tcc cat agg gac ctc tcg aat agg cac	436
Asn Asp Asp Glu Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His	
125 130 135 140	
agt tac ccc cag caa gca ccc tac tgg aca cac ccc cag cgc atg gag	484
Ser Tyr Pro Gln Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu	
145 150 155	
aag aaa ctg cat gca gta cct gcg ggg aac acc gtc aag ttc cgc tgt	532
Lys Lys Leu His Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys	
160 165 170	
cca gct gca ggc aac ccc acg ccc acc atc cgc tgg ctt aag gat gga	580
Pro Ala Ala Gly Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly	
175 180 185	
cag gcc ttt cat ggg gag aac cgc att gga ggc att cgg ctg cgc cat	628
Gln Ala Phe His Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His	
190 195 200	
cag cac tgg agt ctc gtg atg gag agc gtg gtg ccc tcg gac cgc ggc	676
Gln His Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly	
205 210 215 220	
aca tac acc tgc ctg gta gag aac gct gtg ggc agc atc cgt tat aac	724
Thr Tyr Thr Cys Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn	
225 230 235	
tac ctg cta gat gtg ctg gag cgg tcc ccg cac cgg ccc atc ctg cag	772
Tyr Leu Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln	
240 245 250	
gcc ggg ctc ccg gcc aac acc aca gcc gtg gtg ggc agc gac gtg gag	820
Ala Gly Leu Pro Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu	
255 260 265	
ctg ctg tgc aag gtg tac agc gat gcc cag ccc cac atc cag cgg ctg	868
Leu Leu Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Arg Leu	
270 275 280	
aag cac atc gtc atc aac ggc agc agc ttc gga gcc gac ggt ttc ccc	916
Lys His Ile Val Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro	
285 290 295 300	
tat gtg caa gtc cta aag act gca gac atc aat agc tca gag gtg gag	964
Tyr Val Gln Val Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu	
305 310 315	
gtc ctg tac ctg cgg aac gtg tca gcc gag gac gca ggc gag tac acc	1012
Val Leu Tyr Leu Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr	

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tgc	ctc	gca	ggc	aat	tcc	atc	ggc	ctc	tcc	tac	cag	tct	gcc	tgg	ctc	1060					
Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu						
335							340							345							
acg	gtg	ctg	cca	gtg	cga	ggg	cag	agg	agg	acc	cca	cat	gga	ccg	cag	1108					
Thr	Val	Leu	Pro	Val	Arg	Gly	Gln	Arg	Arg	Thr	Pro	His	Gly	Pro	Gln						
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cag	cgc	ccg	agg	cca	ggt	ata	cgg	aca	tca	tcc	tgt	acg	cgt	cgg	gct	1156					
Gln	Arg	Pro	Arg	Pro	Gly	Ile	Arg	Thr	Ser	Ser	Cys	Thr	Arg	Arg	Ala						
365							370							375							380
ccc	tgg	cct	tgg	ctg	tgc	tcc	tgc	tgc	tgg	ccg	ggc	tgt	atc	gag	ggc	1204					
Pro	Trp	Pro	Trp	Leu	Cys	Ser	Cys	Cys	Trp	Pro	Gly	Cys	Ile	Glu	Gly						
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agg	cgc	tcc	acg	gcc	ggc	acc	ccc	gcc	cgc	ccg	cca	ctg	tgc	aga	agc	1252					
Arg	Arg	Ser	Thr	Ala	Gly	Thr	Pro	Ala	Arg	Pro	Pro	Leu	Cys	Arg	Ser						
400							405							410							
tct	ccc	gct	tcc	ctc	tgg	ccc	gac	agt	tct	ccc	tgg	agt	cag	gct	ctt	1300					
Ser	Pro	Ala	Ser	Leu	Trp	Pro	Asp	Ser	Ser	Pro	Trp	Ser	Gln	Ala	Leu						
415							420							425							
ccg	gca	agt	caa	gct	cat	ccc	tgg	tac	gag	gcg	tgc	gtc	tct	cct	cca	1348					
Pro	Ala	Ser	Gln	Ala	His	Pro	Trp	Tyr	Glu	Ala	Cys	Val	Ser	Pro	Pro						
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gcg	gcc	ccg	cct	tgc	tcg	ccg	gcc	tcg	ctg	gtg	ctt	ggg	aag	ccc	cta	1396					
Ala	Ala	Pro	Pro	Cys	Ser	Pro	Ala	Ser	Leu	Val	Leu	Gly	Lys	Pro	Leu						
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ggc	gag	ggc	tgc	ttt	ggc	cag	gta	gta	cgt	gca	gag	gcc	ttt	ggc	atg	1444					
Gly	Glu	Gly	Cys	Phe	Gly	Gln	Val	Val	Arg	Ala	Glu	Ala	Phe	Gly	Met						
465							470							475							
gac	cct	gcc	cgg	cct	gac	caa	gcc	agc	act	gtg	gcc	gtc	aag	atg	ctc	1492					
Asp	Pro	Ala	Arg	Pro	Asp	Gln	Ala	Ser	Thr	Val	Ala	Val	Lys	Met	Leu						
480							485							490							
aaa	gac	aac	gcc	tct	gac	aag	gac	ctg	gcc	gac	ctg	gtc	tcg	gag	atg	1540					
Lys	Asp	Asn	Ala	Ser	Asp	Lys	Asp	Leu	Ala	Asp	Leu	Val	Ser	Glu	Met						
495							500							505							
gag	gtg	atg	aag	ctg	atc	ggc	cga	cac	aag	aac	atc	atc	aac	ctg	ctt	1588					
Glu	Val	Met	Lys	Leu	Ile	Gly	Arg	His	Lys	Asn	Ile	Ile	Asn	Leu	Leu						
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ggt	gtc	tgc	acc	cag	gaa	ggg	ccc	ctg	tac	gtg	atc	gtg	gag	tgc	gcc	1636					
Gly	Val	Cys	Thr	Gln	Glu	Gly	Pro	Leu	Tyr	Val	Ile	Val	Glu	Cys	Ala						
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gcc	aag	gga	aac	ctg	cgg	gag	ttc	ctg	cgg	gcc	cgg	cgc	ccc	cca	ggc	1684					
Ala	Lys	Gly	Asn	Leu	Arg	Glu	Phe	Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly						
545							550							555							
ccc	gac	ctc	agc	ccc	gac	ggt	cct	cgg	agc	agt	gag	ggg	ccg	ctc	tcc	1732					
Pro	Asp	Leu	Ser	Pro	Asp	Gly	Pro	Arg	Ser	Ser	Glu	Gly	Pro	Leu	Ser						
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ttc	cca	gtc	ctg	gtc	tcc	tgc	gcc	tac	cag	gtg	gcc	cga	ggc	atg	cag	1780					

Phe	Pro	Val	Leu	Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Gln		
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tat	ctg	gag	tcc	cgg	aag	tgt	atc	cac	cgg	gac	ctg	gct	gcc	cgc	aat	1828	
Tyr	Leu	Glu	Ser	Arg	Lys	Cys	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn		
	590					595					600						
gtg	ctg	gtg	act	gag	gac	aat	gtg	atg	aag	att	gct	gac	ttt	ggg	ctg	1876	
Val	Leu	Val	Thr	Glu	Asp	Asn	Val	Met	Lys	Ile	Ala	Asp	Phe	Gly	Leu		
	605				610					615				620			
gcc	cgc	ggc	gtc	cac	cac	att	gac	tac	tat	aag	aaa	acc	agc	aac	ggc	1924	
Ala	Arg	Gly	Val	His	His	Ile	Asp	Tyr	Tyr	Lys	Lys	Thr	Ser	Asn	Gly		
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cgc	ctg	cct	gtg	aag	tgg	atg	gcg	ccc	gag	gcc	ttg	ttt	gac	cgg	gtg	1972	
Arg	Leu	Pro	Val	Lys	Trp	Met	Ala	Pro	Glu	Ala	Leu	Phe	Asp	Arg	Val		
			640					645					650				
tac	aca	cac	cag	agt	gac	gtg	tgg	tct	ttt	ggg	atc	ccg	cta	tgg	gag	2020	
Tyr	Thr	His	Gln	Ser	Asp	Val	Trp	Ser	Phe	Gly	Ile	Pro	Leu	Trp	Glu		
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atc	ttc	acc	ctc	ggg	ggc	tcc	ccg	tat	cct	ggc	atc	ccg	gtg	gag	gag	2068	
Ile	Phe	Thr	Leu	Gly	Gly	Ser	Pro	Tyr	Pro	Gly	Ile	Pro	Val	Glu	Glu		
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ctg	ttc	tcg	ctg	ctg	cgg	gag	gga	cat	cgg	atg	gac	cga	ccc	cca	cac	2116	
Leu	Phe	Ser	Leu	Leu	Arg	Glu	Gly	His	Arg	Met	Asp	Arg	Pro	Pro	His		
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tgc	ccc	cca	gag	ctg	tac	ggg	ctg	atg	cgt	gag	tgc	tgg	cac	gca	gcg	2164	
Cys	Pro	Pro	Glu	Leu	Tyr	Gly	Leu	Met	Arg	Glu	Cys	Trp	His	Ala	Ala		
				705					710					715			
ccc	tcc	cag	agg	cct	acc	ttc	aag	cag	ctg	gtg	gag	gcg	ctg	gac	aag	2212	
Pro	Ser	Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Ala	Leu	Asp	Lys		
				720				725					730				
gtc	ctg	ctg	gcc	gtc	tct	gag	gag	tac	ctc	gac	ctc	cgc	ctg	acc	ttc	2260	
Val	Leu	Leu	Ala	Val	Ser	Glu	Glu	Tyr	Leu	Asp	Leu	Arg	Leu	Thr	Phe		
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gga	ccc	tat	tcc	ccc	tct	ggt	ggg	gac	gcc	agc	agc	acc	tgc	tcc	tcc	2308	
Gly	Pro	Tyr	Ser	Pro	Ser	Gly	Gly	Asp	Ala	Ser	Ser	Thr	Cys	Ser	Ser		
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Ser	Asp	Ser	Val	Phe	Ser	His	Asp	Pro	Leu	Pro	Leu	Gly	Ser	Ser	Ser		
	765				770				775					780			
ttc	ccc	ttc	ggg	tct	ggg	gtg	cag	aca								2383	
Phe	Pro	Phe	Gly	Ser	Gly	Val	Gln	Thr									
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 35 40 45
 Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala Glu Arg Gly Gly
 50 55 60
 His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg
 65 70 75 80
 Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu Pro Glu Asp Ala
 85 90 95
 Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn
 100 105 110
 Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser Asn Asp Asp Glu
 115 120 125
 Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln
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 Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu Lys Lys Leu His
 145 150 155 160
 Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys Pro Ala Ala Gly
 165 170 175
 Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly Gln Ala Phe His
 180 185 190
 Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser
 195 200 205
 Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Thr Tyr Thr Cys
 210 215 220
 Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn Tyr Leu Leu Asp
 225 230 235 240
 Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
 245 250 255
 Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu Leu Leu Cys Lys
 260 265 270
 Val Tyr Ser Asp Ala Gln Pro His Ile Gln Arg Leu Lys His Ile Val
 275 280 285
 Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro Tyr Val Gln Val
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 Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu Val Leu Tyr Leu
 305 310 315 320
 Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly
 325 330 335
 Asn Ser Ile Gly Leu Ser Tyr Gln Ser Ala Trp Leu Thr Val Leu Pro
 340 345 350

Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln Gln Arg Pro Arg
355 360 365
Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala Pro Trp Pro Trp
370 375 380
Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly Arg Arg Ser Thr
385 390 395 400
Ala Gly Thr Pro Ala Arg Pro Pro Leu Cys Arg Ser Ser Pro Ala Ser
405 410 415
Leu Trp Pro Asp Ser Ser Pro Trp Ser Gln Ala Leu Pro Ala Ser Gln
420 425 430
Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro Ala Ala Pro Pro
435 440 445
Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu Gly Glu Gly Cys
450 455 460
Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met Asp Pro Ala Arg
465 470 475 480
Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
485 490 495
Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
500 505 510
Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu Gly Val Cys Thr
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Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala Ala Lys Gly Asn
530 535 540
Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Pro Asp Leu Ser
545 550 555 560
Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser Phe Pro Val Leu
565 570 575
Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln Tyr Leu Glu Ser
580 585 590
Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr
595 600 605
Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Gly Val
610 615 620
His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
625 630 635 640
Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
645 650 655
Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
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Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Ser Leu
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Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His Cys Pro Pro Glu
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 705 710 715 720
 Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys Val Leu Leu Ala
 725 730 735
 Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe Gly Pro Tyr Ser
 740 745 750
 Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser Ser Asp Ser Val
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 Glu Leu Glu Pro Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Glu
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 Leu Thr Val Ala Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala
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 gag cgt ggt ggc cac tgg tac aag gag ggc agt cgc ctg gca cct gct 244
 Glu Arg Gly Gly His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala
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 ggc cgt gta cgg ggc tgg agg ggc cgc cta gag att gcc agc ttc cta 292
 Gly Arg Val Arg Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu
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 cct gag gat gct ggc cgc tac ctc tgc ccg gca cga ggc tcc atg atc 340
 Pro Glu Asp Ala Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile
 95 100 105
 gtc ctg cag aat ctc acc ttg att aca ggt gac tcc ttg acc tcc agc 388
 Val Leu Gln Asn Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser
 110 115 120

aac gat gat gag gac ccc gag tcc cat agg gac ctc tcg aat agg cac	436
Asn Asp Asp Glu Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His	
125 130 135 140	
agt tac ccc cag caa gca ccc tac tgg aca cac ccc cag cgc atg gag	484
Ser Tyr Pro Gln Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu	
145 150 155	
aag aaa ctg cat gca gta cct gcg ggg aac acc gtc aag ttc cgc tgt	532
Lys Lys Leu His Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys	
160 165 170	
cca gct gca ggc aac ccc acg ccc acc atc cgc tgg ctt aag gat gga	580
Pro Ala Ala Gly Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly	
175 180 185	
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Gln Ala Phe His Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His	
190 195 200	
cag cac tgg agt ctc gtg atg gag agc gtg gtg ccc tcg gac cgc ggc	676
Gln His Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly	
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Thr Tyr Thr Cys Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn	
225 230 235	
tac ctg cta gat gtg ctg gag cgg tcc ccg cac cgg ccc atc ctg cag	772
Tyr Leu Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln	
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gcc ggg ctc ccg gcc aac acc aca gcc gtg gtg ggc agc gac gtg gag	820
Ala Gly Leu Pro Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu	
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ctg ctg tgc aag gtg tac agc gat gcc cag ccc cac atc cag tgg ctg	868
Leu Leu Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu	
270 275 280	
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Lys His Ile Val Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro	
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tat gtg caa gtc cta aag act gca gac atc aat agc tca gag gtg gag	964
Tyr Val Gln Val Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu	
305 310 315	
gtc ctg tac ctg cgg aac gtg tca gcc gag gac gca ggc gag tac acc	1012
Val Leu Tyr Leu Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr	
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Cys Leu Ala Gly Asn Ser Ile Gly Leu Ser Tyr Gln Ser Ala Trp Leu	
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acg gtg ctg cca gtg cga ggg cag agg agg acc cca cat gga ccg cag	1108
Thr Val Leu Pro Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln	
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cag cgc ccg agg cca ggt ata cgg aca tca tcc tgt acg cgt cgg gct	1156
Gln Arg Pro Arg Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala	
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365		370		375		380	
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Pro Trp Pro Trp Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly							
		385		390		395	
agg cgc tcc acg gcc ggc acc ccc gcc cgc ccg cca ctg tgc aga agc	1252						
Arg Arg Ser Thr Ala Gly Thr Pro Ala Arg Pro Pro Leu Cys Arg Ser		400		405		410	
tct ccc gct ccc ctc tgg ccc gac agt tct ccc tgg agt cag gct ctt	1300						
Ser Pro Ala Pro Leu Trp Pro Asp Ser Ser Pro Trp Ser Gln Ala Leu		415		420		425	
ccg gca agt caa gct cat ccc tgg tac gag gcg tgc gtc tct cct cca	1348						
Pro Ala Ser Gln Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro		430		435		440	
gcg gcc ccg cct tgc tgc ccg gcc tgc ctg gtg ctt ggg aag ccc cta	1396						
Ala Ala Pro Pro Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu		445		450		455	460
ggc gag ggc tgc ttt ggc cag gta gta cgt gca gag gcc ttt ggc atg	1444						
Gly Glu Gly Cys Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met		465		470		475	
gac cct gcc cgg cct gac caa gcc agc act gtg gcc gtc aag atg ctc	1492						
Asp Pro Ala Arg Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu		480		485		490	
aaa gac aac gcc tct gac aag gac ctg gcc gac ctg gtc tgc gag atg	1540						
Lys Asp Asn Ala Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met		495		500		505	
gag gtg atg aag ctg atc ggc cga cac aag aac atc atc aac ctg ctt	1588						
Glu Val Met Lys Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu		510		515		520	
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Gly Val Cys Thr Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala		525		530		535	540
gcc aag gga aac ctg cgg gag ttc ctg cgg gcc ccg cgc ccc cca ggc	1684						
Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly		545		550		555	
ccc gac ctc agc ccc gac ggt cct cgg agc agt gag ggg ccg ctc tcc	1732						
Pro Asp Leu Ser Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser		560		565		570	
ttc cca gtc ctg gtc tcc tgc gcc tac cag gtg gcc cga ggc atg cag	1780						
Phe Pro Val Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln		575		580		585	
tat ctg gag tcc cgg aag tgt atc cac cgg gac ctg gct gcc cgc aat	1828						
Tyr Leu Glu Ser Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn		590		595		600	
gtg ctg gtg act gag gac aat gtg atg aag att gct gac ttt ggg ctg	1876						
Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu		605		610		615	620
gcc cgc ggc gtc cac cac att gac tac tat aag aaa acc agc aac ggc	1924						
				30			

Ala Arg Gly Val His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly	
625 630 635	
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Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val	
640 645 650	
tac aca cac cag agt gac gtg tgg tct ttt ggg atc ccg cta tgg gag	2020
Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu	
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atc ttc acc ctc ggg ggc tcc ccg tat cct ggc atc ccg gtg gag gag	2068
Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu	
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ctg ttc tcg ctg ctg cgg gag gga cat cgg atg gac cga ccc cca cac	2116
Leu Phe Ser Leu Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His	
685 690 695 700	
tgc ccc cca gag ctg tac ggg ctg atg cgt gag tgc tgg cac gca gcg	2164
Cys Pro Pro Glu Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala	
705 710 715	
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Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys	
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gtc ctg ctg gcc gtc tct gag gag tac ctc gac ctc cgc ctg acc ttc	2260
Val Leu Leu Ala Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe	
735 740 745	
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Gly Pro Tyr Ser Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser	
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agc gat tct gtc ttc agc cac gac ccc ctg cca ttg gga tcc agc tcc	2356
Ser Asp Ser Val Phe Ser His Asp Pro Leu Pro Leu Gly Ser Ser Ser	
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<213> Homo sapiens

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Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Glu Leu Thr Val Ala
35 40 45

Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala Glu Arg Gly Gly
50 55 60

His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg
65 70 75 80

Gly	Trp	Arg	Gly	Arg	Leu	Glu	Ile	Ala	Ser	Phe	Leu	Pro	Glu	Asp	Ala	
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Gly	Arg	Tyr	Leu	Cys	Pro	Ala	Arg	Gly	Ser	Met	Ile	Val	Leu	Gln	Asn	
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Leu	Thr	Leu	Ile	Thr	Gly	Asp	Ser	Leu	Thr	Ser	Ser	Asn	Asp	Asp	Glu	
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Asp	Pro	Glu	Ser	His	Arg	Asp	Leu	Ser	Asn	Arg	His	Ser	Tyr	Pro	Gln	
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Gln	Ala	Pro	Tyr	Trp	Thr	His	Pro	Gln	Arg	Met	Glu	Lys	Lys	Leu	His	
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Ala	Val	Pro	Ala	Gly	Asn	Thr	Val	Lys	Phe	Arg	Cys	Pro	Ala	Ala	Gly	
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Asn	Pro	Thr	Pro	Thr	Ile	Arg	Trp	Leu	Lys	Asp	Gly	Gln	Ala	Phe	His	
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Gly	Glu	Asn	Arg	Ile	Gly	Gly	Ile	Arg	Leu	Arg	His	Gln	His	Trp	Ser	
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Leu	Val	Met	Glu	Ser	Val	Val	Pro	Ser	Asp	Arg	Gly	Thr	Tyr	Thr	Cys	
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Leu	Val	Glu	Asn	Ala	Val	Gly	Ser	Ile	Arg	Tyr	Asn	Tyr	Leu	Leu	Asp	
225					230					235					240	
Val	Leu	Glu	Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Gln	Ala	Gly	Leu	Pro	
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Ala	Asn	Thr	Thr	Ala	Val	Val	Gly	Ser	Asp	Val	Glu	Leu	Leu	Cys	Lys	
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Val	Tyr	Ser	Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu	Lys	His	Ile	Val	
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Ile	Asn	Gly	Ser	Ser	Phe	Gly	Ala	Asp	Gly	Phe	Pro	Tyr	Val	Gln	Val	
	290					295					300					
Leu	Lys	Thr	Ala	Asp	Ile	Asn	Ser	Ser	Glu	Val	Glu	Val	Leu	Tyr	Leu	
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Arg	Asn	Val	Ser	Ala	Glu	Asp	Ala	Gly	Glu	Tyr	Thr	Cys	Leu	Ala	Gly	
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Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu	Thr	Val	Leu	Pro	
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Val	Arg	Gly	Gln	Arg	Arg	Thr	Pro	His	Gly	Pro	Gln	Gln	Arg	Pro	Arg	
		355					360					365				
Pro	Gly	Ile	Arg	Thr	Ser	Ser	Cys	Thr	Arg	Arg	Ala	Pro	Trp	Pro	Trp	
	370					375					380					
Leu	Cys	Ser	Cys	Cys	Trp	Pro	Gly	Cys	Ile	Glu	Gly	Arg	Arg	Ser	Thr	
385					390					395					400	
Ala	Gly	Thr	Pro	Ala	Arg	Pro	Pro	Leu	Cys	Arg	Ser	Ser	Pro	Ala	Pro	
				405					410					415		

Leu Trp Pro Asp Ser Ser Pro Trp Ser Gln Ala Leu Pro Ala Ser Gln
 420 425 430
 Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro Ala Ala Pro Pro
 435 440 445
 Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu Gly Glu Gly Cys
 450 455 460
 Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met Asp Pro Ala Arg
 465 470 475 480
 Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
 485 490 495
 Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
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 Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu Gly Val Cys Thr
 515 520 525
 Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala Ala Lys Gly Asn
 530 535 540
 Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Pro Asp Leu Ser
 545 550 555 560
 Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser Phe Pro Val Leu
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 Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln Tyr Leu Glu Ser
 580 585 590
 Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr
 595 600 605
 Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Gly Val
 610 615 620
 His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
 625 630 635 640
 Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
 645 650 655
 Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
 660 665 670
 Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Ser Leu
 675 680 685
 Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His Cys Pro Pro Glu
 690 695 700
 Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala Pro Ser Gln Arg
 705 710 715 720
 Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys Val Leu Leu Ala
 725 730 735
 Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe Gly Pro Tyr Ser
 740 745 750

Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser Ser Asp Ser Val
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Ser Gly Val Gln Thr
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Ser Val Pro Gly Pro Pro Val Ser Ser Leu Glu Ala Ser Glu Glu Val
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gag ctt gag ccc cgc ctg gct ccc agc ctg gag cag caa gag cag gag 148
Glu Leu Glu Pro Arg Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Glu
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ctg aca gta gcc ctt ggg cag cct gtg cgg ctg tgc tgt ggg cgg gct 196
Leu Thr Val Ala Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala
45 50 55 60

gag cgt ggt ggc cac tgg tac aag gag ggc agt cgc ctg gca cct gct 244
Glu Arg Gly Gly His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala
65 70 75

ggc cgt gta cgg ggc tgg agg ggc cgc cta gag att gcc agc ttc cta 292
Gly Arg Val Arg Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu
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cct gag gat gct ggc cgc tac ctc tgc ccg gca cga ggc tcc atg atc 340
Pro Glu Asp Ala Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile
95 100 105

gtc ctg cag aat ctc acc ttg att aca ggt gac tcc ttg acc tcc agc 388
Val Leu Gln Asn Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser
110 115 120

aac gat gat gag gac ccc gag tcc cat agg gac ctc tcg aat agg cac 436
Asn Asp Asp Glu Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His
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agt tac ccc cag caa gca ccc tac tgg aca cac ccc cag cgc atg gag 484
Ser Tyr Pro Gln Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu
145 150 155

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Lys Lys Leu His Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys
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Gln Ala Phe His Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His	
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Gln His Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly	
205 210 215 220	
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Thr Tyr Thr Cys Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn	
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Tyr Leu Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln	
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Leu Leu Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu	
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Tyr Val Gln Val Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu	
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Val Leu Tyr Leu Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr	
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ggt gtc tgc acc cag gaa ggg ccc ctg tac gtg atc gtg gag tgc gcc Gly Val Cys Thr Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala 525 530 535 540			1636
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Ile	Phe	Thr	Leu	Gly	Gly	Ser	Pro	Tyr	Pro	Gly	Ile	Pro	Val	Glu	Glu		
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tgc	ccc	cca	gag	ctg	tac	ggg	ctg	atg	cgt	gag	tgc	tgg	cac	gca	gcg	2164	
Cys	Pro	Pro	Glu	Leu	Tyr	Gly	Leu	Met	Arg	Glu	Cys	Trp	His	Ala	Ala		
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Pro	Ser	Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Ala	Leu	Asp	Lys		
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Val	Leu	Leu	Ala	Val	Ser	Glu	Glu	Tyr	Leu	Asp	Leu	Arg	Leu	Thr	Phe		
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gga	ccc	tat	tcc	ccc	tct	ggt	ggg	gac	gcc	agc	agc	acc	tgc	tcc	tcc	2308	
Gly	Pro	Tyr	Ser	Pro	Ser	Gly	Gly	Asp	Ala	Ser	Ser	Thr	Cys	Ser	Ser		
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Ser	Asp	Ser	Val	Phe	Ser	His	Asp	Pro	Leu	Pro	Leu	Gly	Ser	Ser	Ser		
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ttc	ccc	ttc	ggg	tct	ggg	gtg	cag	aca								2383	
Phe	Pro	Phe	Gly	Ser	Gly	Val	Gln	Thr									
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 Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu Gly Glu Gly Cys
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 Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met Asp Pro Ala Arg
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Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
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 Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
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Glu Leu Glu Pro Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Glu
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Leu Thr Val Ala Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala
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Gly Arg Val Arg Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu
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gtc ctg cag aat ctc acc ttg att aca ggt gac tcc ttg acc tcc agc  388
Val Leu Gln Asn Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser
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Lys Lys Leu His Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys
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Pro Ala Ala Gly Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly
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cag gcc ttt cat ggg gag aac cgc att gga ggc att cgg ctg cgc cat  628
Gln Ala Phe His Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His
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Gln His Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly
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Tyr Leu Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln	
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gcc ggg ctc ccg gcc aac acc aca gcc gtg gtg ggc agc gac gtg gag	820
Ala Gly Leu Pro Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu	
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ctg ctg tgc aag gtg tac agc gat gcc cag ccc cac atc cag tgg ctg	868
Leu Leu Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu	
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Lys His Ile Val Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro	
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Tyr Val Gln Val Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu	
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Val Leu Tyr Leu Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr	
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Thr Val Leu Pro Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln	
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Gln Arg Pro Arg Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala	
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Ala Ala Pro Pro Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu	
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Phe	Pro	Val	Leu	Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Gln					
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ctg	ttc	tcg	ctg	ctg	cgg	gag	gga	cat	cgg	atg	gac	cga	ccc	cca	cac	2116				
Leu	Phe	Ser	Leu	Leu	Arg	Glu	Gly	His	Arg	Met	Asp	Arg	Pro	Pro	His					
685					690					695					700					
tgc	ccc	cca	gag	ctg	tac	ggg	ctg	atg	cgt	gag	tgc	tgg	cac	gca	gcg	2164				
Cys	Pro	Pro	Glu	Leu	Tyr	Gly	Leu	Met	Arg	Glu	Cys	Trp	His	Ala	Ala					
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Ser	Asp	Ser	Val	Phe	Ser	His	Asp	Pro	Leu	Pro	Leu	Gly	Ser	Ser	Ser		
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ttc	ccc	ttc	ggg	tct	ggg	gtg	cag	aca								2383	
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 Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Ile Val
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Glu	Arg	Gly	Gly	His	Trp	Tyr	Lys	Glu	Gly	Ser	Arg	Leu	Ala	Pro	Ala	
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ggc	cgt	gta	cgg	ggc	tgg	agg	ggc	cgc	cta	gag	att	gcc	agc	ttc	cta	292
Gly	Arg	Val	Arg	Gly	Trp	Arg	Gly	Arg	Leu	Glu	Ile	Ala	Ser	Phe	Leu	
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Val	Leu	Gln	Asn	Leu	Thr	Leu	Ile	Thr	Gly	Asp	Ser	Leu	Thr	Ser	Ser	
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Ser	Tyr	Pro	Gln	Gln	Ala	Pro	Tyr	Trp	Thr	His	Pro	Gln	Arg	Met	Glu	
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Lys	Lys	Leu	His	Ala	Val	Pro	Ala	Gly	Asn	Thr	Val	Lys	Phe	Arg	Cys	
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Gln	Ala	Phe	His	Gly	Glu	Asn	Arg	Ile	Gly	Gly	Ile	Arg	Leu	Arg	His	
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Gln	His	Trp	Ser	Leu	Val	Met	Glu	Ser	Val	Val	Pro	Ser	Asp	Arg	Gly	
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Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu	
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Thr	Val	Leu	Pro	Val	Arg	Gly	Gln	Arg	Arg	Thr	Pro	His	Gly	Pro	Gln	
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ccg	gca	agt	caa	gct	cat	ccc	tgg	tac	gag	gcg	tgc	gtc	tct	cct	cca	1348
Pro	Ala	Ser	Gln	Ala	His	Pro	Trp	Tyr	Glu	Ala	Cys	Val	Ser	Pro	Pro	
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Asp	Pro	Ala	Arg	Pro	Asp	Gln	Ala	Ser	Thr	Val	Ala	Val	Lys	Met	Leu	
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Lys	Asp	Asn	Ala	Ser	Asp	Lys	Asp	Leu	Ala	Asp	Leu	Val	Ser	Glu	Met	
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2383

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Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala Glu Arg Gly Gly
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Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn
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Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln
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Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu Lys Lys Leu His
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Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser
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Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
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Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu Leu Leu Cys Lys
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Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln Gln Arg Pro Arg
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Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
485 490 495
Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
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Cys	Pro	Pro	Glu	Leu	Tyr	Gly	Leu	Met	Arg	Glu	Cys	Trp	His	Ala	Ala	
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ccc	tcc	cag	agg	cct	acc	ttc	aag	cag	ctg	gtg	gag	gcg	ctg	gac	aag	2212
Pro	Ser	Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Ala	Leu	Asp	Lys	
				720					725						730	
gtc	ctg	ctg	gcc	gtc	tct	gag	gag	tac	ctc	gac	ctc	cgc	ctg	acc	ttc	2260
Val	Leu	Leu	Ala	Val	Ser	Glu	Glu	Tyr	Leu	Asp	Leu	Arg	Leu	Thr	Phe	
				735					740						745	
gga	ccc	tat	tcc	ccc	tct	ggt	ggg	gac	gcc	agc	agc	acc	tgc	tcc	tcc	2308
Gly	Pro	Tyr	Ser	Pro	Ser	Gly	Gly	Asp	Ala	Ser	Ser	Thr	Cys	Ser	Ser	
				750					755						760	
agc	gat	tct	gtc	ttc	agc	cac	gac	ccc	ctg	cca	ttg	gga	tcc	agc	tcc	2356
Ser	Asp	Ser	Val	Phe	Ser	His	Asp	Pro	Leu	Pro	Leu	Gly	Ser	Ser	Ser	
				765					770						780	
ttc	ccc	ttc	ggg	tct	ggg	gtg	cag	aca	gtc	gac	ggc					2392
Phe	Pro	Phe	Gly	Ser	Gly	Val	Gln	Thr								
				785												

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20 25 30

Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Glu Leu Thr Val Ala
35 40 45

Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala Glu Arg Gly Gly
50 55 60

His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg
65 70 75 80

Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu Pro Glu Asp Ala
85 90 95

Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn
100 105 110

Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser Asn Asp Asp Glu
115 120 125

Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln
130 135 140

Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu Lys Lys Leu His
145 150 155 160

Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys Pro Ala Ala Gly
165 170 175

Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly Gln Ala Phe His
180 185 190

Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser
195 200 205

Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Thr Tyr Thr Cys
210 215 220

Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn Tyr Leu Leu Asp
225 230 235 240

Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
245 250 255

Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu Leu Leu Cys Lys
260 265 270

Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Ile Val
275 280 285

Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro Tyr Val Gln Val
290 295 300

Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu Val Leu Tyr Leu
305 310 315 320

Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly
325 330 335
55

Asn Ser Ile Gly Leu Ser Tyr Gln Ser Ala Trp Leu Thr Val Leu Pro
 340 345 350
 Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln Gln Arg Pro Arg
 355 360 365
 Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala Pro Trp Pro Trp
 370 375 380
 Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly Arg Arg Ser Thr
 385 390 395 400
 Ala Gly Thr Pro Ala Arg Pro Pro Leu Cys Arg Ser Ser Pro Ala Ser
 405 410 415
 Leu Trp Pro Asp Ser Ser Pro Trp Ser Gln Ala Leu Pro Ala Ser Gln
 420 425 430
 Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro Ala Ala Pro Pro
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 Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu Gly Glu Gly Cys
 450 455 460
 Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met Asp Pro Ala Arg
 465 470 475 480
 Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
 485 490 495
 Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
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 Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu Gly Val Cys Thr
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 Gln Glu Gly Pro Leu Tyr Val Ile Val Lys Cys Ala Ala Lys Gly Asn
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 Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Pro Asp Leu Ser
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 Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser Phe Pro Val Leu
 565 570 575
 Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln Tyr Leu Glu Ser
 580 585 590
 Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr
 595 600 605
 Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Gly Val
 610 615 620
 His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
 625 630 635 640
 Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
 645 650 655
 Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
 660 665 670

Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Ser Leu
 675 680 685
 Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His Cys Pro Pro Glu
 690 695 700
 Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala Pro Ser Gln Arg
 705 710 715 720
 Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys Val Leu Leu Ala
 725 730 735
 Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe Gly Pro Tyr Ser
 740 745 750
 Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser Ser Asp Ser Val
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 Phe Ser His Asp Pro Leu Pro Leu Gly Ser Ser Ser Phe Pro Phe Gly
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 Ser Val Pro Gly Pro Pro Val Ser Ser Leu Glu Ala Ser Glu Glu Val
 15 20 25
 gag ctt gag ccc tgc ctg gct ccc agc ctg gag cag caa gag cag gag 148
 Glu Leu Glu Pro Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu
 30 35 40
 ctg aca gta gcc ctt ggg cag cct gtg cgg ctg tgc tgt ggg cgg gct 196
 Leu Thr Val Ala Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala
 45 50 55 60
 gag cgt ggt ggc cac tgg tac aag gag ggc agt cgc ctg gca cct gct 244
 Glu Arg Gly Gly His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala
 65 70 75
 ggc cgt gta cgg ggc tgg agg ggc cgc cta gag att gcc agc ttc cta 292
 Gly Arg Val Arg Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu
 80 85 90
 cct gag gat gct ggc cgc tac ctc tgc ccg gca cga ggc tcc atg atc 340
 Pro Glu Asp Ala Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile
 95 100 105

gtc	ctg	cag	aat	ctc	acc	ttg	att	aca	ggg	gac	tcc	ttg	acc	tcc	agc	388
Val	Leu	Gln	Asn	Leu	Thr	Leu	Ile	Thr	Gly	Asp	Ser	Leu	Thr	Ser	Ser	
	110					115					120					
aac	gat	gat	gag	gac	ccc	gag	tcc	cat	agg	gac	ctc	tcg	aat	agg	cac	436
Asn	Asp	Asp	Glu	Asp	Pro	Glu	Ser	His	Arg	Asp	Leu	Ser	Asn	Arg	His	
125					130					135					140	
agt	tac	ccc	cag	caa	gca	ccc	tac	tgg	aca	cac	ccc	cag	cgc	atg	gag	484
Ser	Tyr	Pro	Gln	Gln	Ala	Pro	Tyr	Trp	Thr	His	Pro	Gln	Arg	Met	Glu	
				145					150					155		
aag	aaa	ctg	cat	gca	gta	cct	gcg	ggg	aac	acc	gtc	aag	ttc	cgc	tgt	532
Lys	Lys	Leu	His	Ala	Val	Pro	Ala	Gly	Asn	Thr	Val	Lys	Phe	Arg	Cys	
			160					165					170			
cca	gct	gca	ggc	aac	ccc	acg	ccc	acc	atc	cgc	tgg	ctt	aag	gat	gga	580
Pro	Ala	Ala	Gly	Asn	Pro	Thr	Pro	Thr	Ile	Arg	Trp	Leu	Lys	Asp	Gly	
		175					180					185				
cag	gcc	ttt	cat	ggg	gag	aac	cgc	att	gga	ggc	att	cgg	ctg	cgc	cat	628
Gln	Ala	Phe	His	Gly	Glu	Asn	Arg	Ile	Gly	Gly	Ile	Arg	Leu	Arg	His	
	190					195					200					
cag	cac	tgg	agt	ctc	gtg	atg	gag	agc	gtg	gtg	ccc	tcg	gac	cgc	ggc	676
Gln	His	Trp	Ser	Leu	Val	Met	Glu	Ser	Val	Val	Pro	Ser	Asp	Arg	Gly	
205					210				215						220	
aca	tac	acc	tgc	ctg	gta	gag	aac	gct	gtg	ggc	agc	atc	cgt	tat	aac	724
Thr	Tyr	Thr	Cys	Leu	Val	Glu	Asn	Ala	Val	Gly	Ser	Ile	Arg	Tyr	Asn	
				225					230					235		
tac	ctg	cta	gat	gtg	ctg	gag	cgg	tcc	ccg	cac	cgg	ccc	atc	ctg	cag	772
Tyr	Leu	Leu	Asp	Val	Leu	Glu	Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Gln	
			240					245					250			
gcc	ggg	ctc	ccg	gcc	aac	acc	aca	gcc	gtg	gtg	ggc	agc	gac	gtg	gag	820
Ala	Gly	Leu	Pro	Ala	Asn	Thr	Thr	Ala	Val	Val	Gly	Ser	Asp	Val	Glu	
		255					260					265				
ctg	ctg	tgc	aag	gtg	tac	agc	gat	gcc	cag	ccc	cac	atc	cag	tgg	ctg	868
Leu	Leu	Cys	Lys	Val	Tyr	Ser	Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu	
	270					275					280					
aag	cac	atc	gtc	atc	aac	ggc	agc	agc	ttc	gga	gcc	gac	ggg	ttc	ccc	916
Lys	His	Ile	Val	Ile	Asn	Gly	Ser	Ser	Phe	Gly	Ala	Asp	Gly	Phe	Pro	
285					290					295					300	
tat	gtg	caa	gtc	cta	aag	act	gca	gac	atc	aat	agc	tca	gag	gtg	gag	964
Tyr	Val	Gln	Val	Leu	Lys	Thr	Ala	Asp	Ile	Asn	Ser	Ser	Glu	Val	Glu	
				305					310					315		
gtc	ctg	tac	ctg	cgg	aac	gtg	tca	gcc	gag	gac	gca	ggc	gag	tac	acc	1012
Val	Leu	Tyr	Leu	Arg	Asn	Val	Ser	Ala	Glu	Asp	Ala	Gly	Glu	Tyr	Thr	
			320					325					330			
tgc	ctc	gca	ggc	aat	tcc	atc	ggc	ctc	tcc	tac	cag	tct	gcc	tgg	ctc	1060
Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu	
		335					340					345				
acg	gtg	ctg	cca	gtg	cga	ggg	cag	agg	agg	acc	cca	cat	gga	ccg	cag	1108
Thr	Val	Leu	Pro	Val	Arg	Gly	Gln	Arg	Arg	Thr	Pro	His	Gly	Pro	Gln	
	350					355					360					

cag cgc ccg agg cca ggt ata cgg aca tca tcc tgt acg cgt cgg gct	1156
Gln Arg Pro Arg Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala	
365 370 375 380	
ccc tgg cct tgg ctg tgc tcc tgc tgc tgg ccg ggc tgt atc gag ggc	1204
Pro Trp Pro Trp Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly	
385 390 395	
agg cgc tcc acg gcc ggc acc ccc gcc cgc ccg cca ctg tgc aga agc	1252
Arg Arg Ser Thr Ala Gly Thr Pro Ala Arg Pro Pro Leu Cys Arg Ser	
400 405 410	
tct ccc gct tcc ctc tgg ccc gac agt tct ccc tgg agt cag gct ctt	1300
Ser Pro Ala Ser Leu Trp Pro Asp Ser Ser Pro Trp Ser Gln Ala Leu	
415 420 425	
ccg gca agt caa gct cat ccc tgg tac gag gcg tgc gtc tct cct cca	1348
Pro Ala Ser Gln Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro	
430 435 440	
gcg gcc ccg cct tgc tcg ccg gcc tcg ctg gtg ctt ggg aag ccc cta	1396
Ala Ala Pro Pro Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu	
445 450 455 460	
ggc gag ggc tgc ttt ggc cag gta gta cgt gca gag gcc ttt ggc atg	1444
Gly Glu Gly Cys Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met	
465 470 475	
gac cct gcc ccg cct gac caa gcc agc act gtg gcc gtc aag atg ctc	1492
Asp Pro Ala Arg Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu	
480 485 490	
aaa gac aac gcc tct gac aag gac ctg gcc gac ctg gtc tcg gag atg	1540
Lys Asp Asn Ala Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met	
495 500 505	
gag gtg atg aag ctg atc ggc cga cac aag aac atc atc aac ctg ctt	1588
Glu Val Met Lys Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu	
510 515 520	
ggt gtc tgc acc cag gaa ggg ccc ctg tac gtg atc gcg gag tgc gcc	1636
Gly Val Cys Thr Gln Glu Gly Pro Leu Tyr Val Ile Ala Glu Cys Ala	
525 530 535 540	
gcc aag gga aac ctg ccg gag ttc ctg ccg gcc ccg cgc ccc cca ggc	1684
Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly	
545 550 555	
ccc gac ctc agc ccc gac ggt cct ccg agc agt gag ggg ccg ctc tcc	1732
Pro Asp Leu Ser Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser	
560 565 570	
ttc cca gtc ctg gtc tcc tgc gcc tac cag gtg gcc cga ggc atg cag	1780
Phe Pro Val Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln	
575 580 585	
tat ctg gag tcc ccg aag tgt atc cac ccg gac ctg gct gcc cgc aat	1828
Tyr Leu Glu Ser Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn	
590 595 600	
gtg ctg gtg act gag gac aat gtg atg aag att gct gac ttt ggg ctg	1876
Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu	
59	

605	610	615	620	
gcc cgc ggc gtc cac cac att gac tac tat aag aaa acc agc aac ggc Ala Arg Gly Val His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly	625	630	635	1924
cgc ctg cct gtg aag tgg atg gcg ccc gag gcc ttg ttt gac cgg gtg Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val	640	645	650	1972
tac aca cac cag agt gac gtg tgg tct ttt ggg atc ccg cta tgg gag Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu	655	660	665	2020
atc ttc acc ctc ggg ggc tcc ccg tat cct ggc atc ccg gtg gag gag Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu	670	675	680	2068
ctg ttc tcg ctg ctg cgg gag gga cat cgg atg gac cga ccc cca cac Leu Phe Ser Leu Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His	685	690	695	2116
tgc ccc cca gag ctg tac ggg ctg atg cgt gag tgc tgg cac gca gcg Cys Pro Pro Glu Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala	705	710	715	2164
ccc tcc cag agg cct acc ttc aag cag ctg gtg gag gcg ctg gac aag Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys	720	725	730	2212
gtc ctg ctg gcc gtc tct gag gag tac ctc gac ctc cgc ctg acc ttc Val Leu Leu Ala Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe	735	740	745	2260
gga ccc tat tcc ccc tct ggt ggg gac gcc agc agc acc tgc tcc tcc Gly Pro Tyr Ser Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser	750	755	760	2308
agc gat tct gtc ttc agc cac gac ccc ctg cca ttg gga tcc agc tcc Ser Asp Ser Val Phe Ser His Asp Pro Leu Pro Leu Gly Ser Ser Ser	765	770	775	2356
ttc ccc ttc ggg tct ggg gtg cag aca Phe Pro Phe Gly Ser Gly Val Gln Thr	785			2383
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Pro Pro Val Ser Ser Leu Glu Ala Ser Glu Glu Val Glu Leu Glu Pro	20	25	30	
Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Leu Thr Val Ala	35	40	45	
Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala Glu Arg Gly Gly	50	55	60	

His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg
 65 70 75 80
 Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu Pro Glu Asp Ala
 85 90 95
 Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn
 100 105 110
 Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser Asn Asp Asp Glu
 115 120 125
 Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln
 130 135 140
 Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu Lys Lys Leu His
 145 150 155 160
 Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys Pro Ala Ala Gly
 165 170 175
 Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly Gln Ala Phe His
 180 185 190
 Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser
 195 200 205
 Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Thr Tyr Thr Cys
 210 215 220
 Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn Tyr Leu Leu Asp
 225 230 235 240
 Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
 245 250 255
 Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu Leu Leu Cys Lys
 260 265 270
 Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Ile Val
 275 280 285
 Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro Tyr Val Gln Val
 290 295 300
 Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu Val Leu Tyr Leu
 305 310 315 320
 Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly
 325 330 335
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 Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln Gln Arg Pro Arg
 355 360 365
 Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala Pro Trp Pro Trp
 370 375 380
 Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly Arg Arg Ser Thr
 385 390 395 400

Ala Gly Thr Pro	Ala Arg Pro Pro	Leu Cys Arg Ser Ser	Pro Ala Ser
405		410	415
Leu Trp Pro Asp	Ser Ser Pro Trp	Ser Gln Ala Leu Pro	Ala Ser Gln
420		425	430
Ala His Pro Trp	Tyr Glu Ala Cys Val	Ser Pro Pro Ala	Ala Pro Pro
435		440	445
Cys Ser Pro Ala	Ser Leu Val Leu	Gly Lys Pro Leu	Gly Glu Gly Cys
450		455	460
Phe Gly Gln Val	Val Arg Ala Glu	Ala Phe Gly Met	Asp Pro Ala Arg
465		470	475
Pro Asp Gln Ala	Ser Thr Val Ala	Val Lys Met Leu	Lys Asp Asn Ala
	485	490	495
Ser Asp Lys Asp	Leu Ala Asp Leu	Val Ser Glu Met	Glu Val Met Lys
	500	505	510
Leu Ile Gly Arg	His Lys Asn Ile	Ile Ile Asn Leu	Leu Gly Val Cys Thr
	515	520	525
Gln Glu Gly Pro	Leu Tyr Val Ile	Ala Glu Cys Ala	Ala Lys Gly Asn
	530	535	540
Leu Arg Glu Phe	Leu Arg Ala Arg	Arg Arg Pro Pro	Gly Pro Asp Leu Ser
545		550	555
Pro Asp Gly Pro	Arg Ser Ser Glu	Gly Pro Leu Ser	Phe Pro Val Leu
	565	570	575
Val Ser Cys Ala	Tyr Gln Val Ala	Arg Gly Met Gln	Tyr Leu Glu Ser
	580	585	590
Arg Lys Cys Ile	His Arg Asp Leu	Ala Ala Arg Asn	Val Leu Val Thr
	595	600	605
Glu Asp Asn Val	Met Lys Ile Ala	Asp Phe Gly Leu	Ala Arg Gly Val
	610	615	620
His His Ile Asp	Tyr Tyr Lys Lys	Thr Ser Asn Gly	Arg Leu Pro Val
625		630	635
Lys Trp Met Ala	Pro Glu Ala Leu	Phe Asp Arg Val	Tyr Thr His Gln
	645	650	655
Ser Asp Val Trp	Ser Phe Gly Ile	Pro Leu Trp Glu	Ile Phe Thr Leu
	660	665	670
Gly Gly Ser Pro	Tyr Pro Gly Ile	Pro Val Glu Glu	Leu Phe Ser Leu
	675	680	685
Leu Arg Glu Gly	His Arg Met Asp	Arg Pro Pro His	Cys Pro Pro Glu
	690	695	700
Leu Tyr Gly Leu	Met Arg Glu Cys	Trp His Ala Ala	Pro Ser Gln Arg
705		710	715
Pro Thr Phe Lys	Gln Leu Val Glu	Ala Leu Asp Lys	Val Leu Leu Ala
	725	730	735

Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe Gly Pro Tyr Ser
740 745 750

Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser Ser Asp Ser Val
755 760 765

Phe Ser His Asp Pro Leu Pro Leu Gly Ser Ser Ser Phe Pro Phe Gly
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Ser Gly Val Gln Thr
785

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Ser Val Pro Gly Pro Pro Val Ser Ser Leu Glu Ala Ser Glu Glu Val
15 20 25

gag ctt gag ccc tgc ctg gct ccc agc ctg gag cag caa gag cag gag 148
Glu Leu Glu Pro Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Glu
30 35 40

ctg aca gta gcc ctt ggg cag cct gtg cgg ctg tgc tgt ggg cgg gct 196
Leu Thr Val Ala Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala
45 50 55 60

gag cgt ggt ggc cac tgg tac aag gag ggc agt cgc ctg gca cct gct 244
Glu Arg Gly Gly His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala
65 70 75

ggc cgt gta cgg ggc tgg agg ggc cgc cta gag att gcc agc ttc cta 292
Gly Arg Val Arg Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu
80 85 90

cct gag gat gct ggc cgc tac ctc tgc ccg gca cga ggc tcc atg atc 340
Pro Glu Asp Ala Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile
95 100 105

gtc ctg cag aat ctc acc ttg att aca ggt gac tcc ttg acc tcc agc 388
Val Leu Gln Asn Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser
110 115 120

aac gat gat gag gac ccc gag tcc cat agg gac ctc tcg aat agg cac 436
Asn Asp Asp Glu Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His
125 130 135 140

agt tac ccc cag caa gca ccc tac tgg aca cac ccc cag cgc atg gag 484
Ser Tyr Pro Gln Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu
145 150 155

aag aaa ctg cat gca gta cct gcg ggg aac acc gtc aag ttc cgc tgt	532
Lys Lys Leu His Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys	
160 165 170	
cca gct gca ggc aac ccc acg ccc acc atc cgc tgg ctt aag gat gga	580
Pro Ala Ala Gly Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly	
175 180 185	
cag gcc ttt cat ggg gag aac cgc att gga ggc att cgg ctg cgc cat	628
Gln Ala Phe His Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His	
190 195 200	
cag cac tgg agt ctc gtg atg gag agc gtg gtg ccc tcg gac cgc ggc	676
Gln His Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly	
205 210 215 220	
aca tac acc tgc ctg gta gag aac gct gtg ggc agc atc cgt tat aac	724
Thr Tyr Thr Cys Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn	
225 230 235	
tac ctg cta gat gtg ctg gag cgg tcc ccg cac cgg ccc atc ctg cag	772
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Ala Gly Leu Pro Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu	
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Leu Leu Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu	
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Gln Arg Pro Arg Pro Gly Ile Arg Thr Ser Cys Thr Arg Arg Ala	
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Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala Glu Arg Gly Gly 50 55 60
His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg 65 70 75 80
Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu Pro Glu Asp Ala 85 90 95
Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn 100 105 110
Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser Asn Asp Asp Glu 115 120 125

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 Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
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 Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
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 Gln Glu Gly Pro Leu Tyr Val Ile Met Glu Cys Ala Ala Lys Gly Asn
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 His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
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 Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
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 Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
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Glu Leu Glu Pro Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Glu
              30                      35                      40

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Leu Thr Val Ala Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala
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Asn Asp Asp Glu Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His
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Lys Lys Leu His Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys
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Pro Ala Ala Gly Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly
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Gln Ala Phe His Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His
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Leu	Leu	Cys	Lys	Val	Tyr	Ser	Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu	
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Lys	His	Ile	Val	Ile	Asn	Gly	Ser	Ser	Phe	Gly	Ala	Asp	Gly	Phe	Pro	
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Tyr	Val	Gln	Val	Leu	Lys	Thr	Ala	Asp	Ile	Asn	Ser	Ser	Glu	Val	Glu	
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Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu	
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Cys Pro Pro Glu Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala	

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Pro	Pro	Val	Ser	Ser	Leu	Glu	Ala	Ser	Glu	Glu	Val	Glu	Leu	Glu	Pro
			20					25					30		

Cys	Leu	Ala	Pro	Ser	Leu	Glu	Gln	Gln	Glu	Gln	Glu	Leu	Thr	Val	Ala
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Leu	Gly	Gln	Pro	Val	Arg	Leu	Cys	Cys	Gly	Arg	Ala	Glu	Arg	Gly	Gly
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His	Trp	Tyr	Lys	Glu	Gly	Ser	Arg	Leu	Ala	Pro	Ala	Gly	Arg	Val	Arg
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Gly	Trp	Arg	Gly	Arg	Leu	Glu	Ile	Ala	Ser	Phe	Leu	Pro	Glu	Asp	Ala
				85					90					95	

Gly	Arg	Tyr	Leu	Cys	Pro	Ala	Arg	Gly	Ser	Met	Ile	Val	Leu	Gln	Asn
			100					105					110		

Leu	Thr	Leu	Ile	Thr	Gly	Asp	Ser	Leu	Thr	Ser	Ser	Asn	Asp	Asp	Glu
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Asp	Pro	Glu	Ser	His	Arg	Asp	Leu	Ser	Asn	Arg	His	Ser	Tyr	Pro	Gln
	130					135					140				

Gln	Ala	Pro	Tyr	Trp	Thr	His	Pro	Gln	Arg	Met	Glu	Lys	Lys	Leu	His
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Ala	Val	Pro	Ala	Gly	Asn	Thr	Val	Lys	Phe	Arg	Cys	Pro	Ala	Ala	Gly
				165					170					175	

Asn	Pro	Thr	Pro	Thr	Ile	Arg	Trp	Leu	Lys	Asp	Gly	Gln	Ala	Phe	His
			180					185					190		

Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser
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 Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Thr Tyr Thr Cys
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 Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn Tyr Leu Leu Asp
 225 230 235 240
 Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
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 Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu Leu Leu Cys Lys
 260 265 270
 Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Ile Val
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 Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro Tyr Val Gln Val
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 Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly
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 Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln Gln Arg Pro Arg
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 Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala Pro Trp Pro Trp
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 Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly Arg Arg Ser Thr
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 Ala Gly Thr Pro Ala Arg Pro Pro Leu Cys Arg Ser Ser Pro Ala Ser
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 Leu Trp Pro Asp Ser Pro Pro Trp Ser Gln Ala Leu Pro Ala Ser Gln
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 Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro Ala Ala Pro Pro
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 Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu Gly Glu Gly Cys
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 Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met Asp Pro Ala Arg
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 Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
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 Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
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 Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu Gly Val Cys Thr
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Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala Ala Lys Gly Asn
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Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser Phe Pro Val Leu
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Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln Tyr Leu Glu Ser
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Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr
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Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Gly Val
610 615 620

His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
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Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
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Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
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Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Ser Leu
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Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His Cys Pro Pro Glu
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Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala Pro Ser Gln Arg
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Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys Val Leu Leu Ala
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Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe Gly Pro Tyr Ser
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Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser Ser Asp Ser Val
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Ser	Val	Pro	Gly	Pro	Pro	Val	Ser	Ser	Leu	Glu	Ala	Ser	Glu	Glu	Val	
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Glu	Leu	Glu	Pro	Cys	Leu	Ala	Pro	Ser	Leu	Glu	Gln	Gln	Glu	Gln	Glu	
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ctg	aca	gta	gcc	ctt	ggg	cag	cct	gtg	cgg	ctg	tgc	tgt	ggg	cgg	gct	196
Leu	Thr	Val	Ala	Leu	Gly	Gln	Pro	Val	Arg	Leu	Cys	Cys	Gly	Arg	Ala	
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Glu	Arg	Gly	Gly	His	Trp	Tyr	Lys	Glu	Gly	Ser	Arg	Leu	Ala	Pro	Ala	
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Gly	Arg	Val	Arg	Gly	Trp	Arg	Gly	Arg	Leu	Glu	Ile	Ala	Ser	Phe	Leu	
80			85					90								
cct	gag	gat	gct	ggc	cgc	tac	ctc	tgc	ccg	gca	cga	ggc	tcc	atg	atc	340
Pro	Glu	Asp	Ala	Gly	Arg	Tyr	Leu	Cys	Pro	Ala	Arg	Gly	Ser	Met	Ile	
95			100					105								
gtc	ctg	cag	aat	ctc	acc	ttg	att	aca	ggt	gac	tcc	ttg	acc	tcc	agc	388
Val	Leu	Gln	Asn	Leu	Thr	Leu	Ile	Thr	Gly	Asp	Ser	Leu	Thr	Ser	Ser	
110			115					120								
aac	gat	gat	gag	gac	ccc	gag	tcc	cat	agg	gac	ctc	tcg	aat	agg	cac	436
Asn	Asp	Asp	Glu	Asp	Pro	Glu	Ser	His	Arg	Asp	Leu	Ser	Asn	Arg	His	
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agt	tac	ccc	cag	caa	gca	ccc	tac	tgg	aca	cac	ccc	cag	cgc	atg	gag	484
Ser	Tyr	Pro	Gln	Gln	Ala	Pro	Tyr	Trp	Thr	His	Pro	Gln	Arg	Met	Glu	
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aag	aaa	ctg	cat	gca	gta	cct	gcg	ggg	aac	acc	gtc	aag	ttc	cgc	tgt	532
Lys	Lys	Leu	His	Ala	Val	Pro	Ala	Gly	Asn	Thr	Val	Lys	Phe	Arg	Cys	
160			165					170								
cca	gct	gca	ggc	aac	ccc	acg	ccc	acc	atc	cgc	tgg	ctt	aag	gat	gga	580
Pro	Ala	Ala	Gly	Asn	Pro	Thr	Pro	Thr	Ile	Arg	Trp	Leu	Lys	Asp	Gly	
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cag	gcc	ttt	cat	ggg	gag	aac	cgc	att	gga	ggc	att	cgg	ctg	cgc	cat	628
Gln	Ala	Phe	His	Gly	Glu	Asn	Arg	Ile	Gly	Gly	Ile	Arg	Leu	Arg	His	
190			195					200								
cag	cac	tgg	agt	ctc	gtg	atg	gag	agc	gtg	gtg	ccc	tcg	gac	cgc	ggc	676
Gln	His	Trp	Ser	Leu	Val	Met	Glu	Ser	Val	Val	Pro	Ser	Asp	Arg	Gly	
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Thr	Tyr	Thr	Cys	Leu	Val	Glu	Asn	Ala	Val	Gly	Ser	Ile	Arg	Tyr	Asn	
225			230					235								
tac	ctg	cta	gat	gtg	ctg	gag	cgg	tcc	ccg	cac	cgg	ccc	atc	ctg	cag	772
Tyr	Leu	Leu	Asp	Val	Leu	Glu	Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Gln	
240			245					250								

gcc ggg ctc ccg gcc aac acc aca gcc gtg gtg ggc agc gac gtg gag	820
Ala Gly Leu Pro Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu	
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ctg ctg tgc aag gtg tac agc gat gcc cag ccc cac atc cag tgg ctg	868
Leu Leu Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu	
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aag cac atc gtc atc aac ggc agc agc ttc gga gcc gac ggt ttc ccc	916
Lys His Ile Val Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro	
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tat gtg caa gtc cta aag act gca gac atc aat agc tca gag gtg gag	964
Tyr Val Gln Val Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu	
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gtc ctg tac ctg cgg aac gtg tca gcc gag gac gca ggc gag tac acc	1012
Val Leu Tyr Leu Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr	
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Cys Leu Ala Gly Asn Ser Ile Gly Leu Ser Tyr Gln Ser Ala Trp Leu	
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acg gtg ctg cca gtg cga ggg cag agg agg acc cca cat gga ccg cag	1108
Thr Val Leu Pro Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln	
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Gln Arg Pro Arg Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala	
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Pro Trp Pro Trp Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly	
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Arg Arg Ser Thr Ala Gly Thr Pro Ala Arg Pro Pro Leu Cys Arg Ser	
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tct ccc gct tcc ctc tgg ccc gac agt tct ccc ccg agt cag gct ctt	1300
Ser Pro Ala Ser Leu Trp Pro Asp Ser Ser Pro Arg Ser Gln Ala Leu	
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ccg gca agt caa gct cat ccc tgg tac gag gcg tgc gtc tct cct cca	1348
Pro Ala Ser Gln Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro	
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gcg gcc ccg cct tgc tcg ccg gcc tcg ctg gtg ctt ggg aag ccc cta	1396
Ala Ala Pro Pro Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu	
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ggc gag ggc tgc ttt ggc cag gta gta cgt gca gag gcc ttt ggc atg	1444
Gly Glu Gly Cys Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met	
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gac cct gcc ccg cct gac caa gcc agc act gtg gcc gtc aag atg ctc	1492
Asp Pro Ala Arg Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu	
480 485 490	
aaa gac aac gcc tct gac aag gac ctg gcc gac ctg gtc tcg gag atg	1540
Lys Asp Asn Ala Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met	
495 500 505	

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Glu	Val	Met	Lys	Leu	Ile	Gly	Arg	His	Lys	Asn	Ile	Ile	Asn	Leu	Leu	
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Gly	Val	Cys	Thr	Gln	Glu	Gly	Pro	Leu	Tyr	Val	Ile	Val	Glu	Cys	Ala	
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gcc	aag	gga	aac	ctg	cgg	gag	ttc	ctg	cgg	gcc	cgg	cgc	ccc	cca	ggc	1684
Ala	Lys	Gly	Asn	Leu	Arg	Glu	Phe	Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly	
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ccc	gac	ctc	agc	ccc	gac	ggg	cct	cgg	agc	agt	gag	ggg	ccg	ctc	tcc	1732
Pro	Asp	Leu	Ser	Pro	Asp	Gly	Pro	Arg	Ser	Ser	Glu	Gly	Pro	Leu	Ser	
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Phe	Pro	Val	Leu	Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Gln	
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tat	ctg	gag	tcc	cgg	aag	tgt	atc	cac	cgg	gac	ctg	gct	gcc	cgc	aat	1828
Tyr	Leu	Glu	Ser	Arg	Lys	Cys	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	
	590					595					600					
gtg	ctg	gtg	act	gag	gac	aat	gtg	atg	aag	att	gct	gac	ttt	ggg	ctg	1876
Val	Leu	Val	Thr	Glu	Asp	Asn	Val	Met	Lys	Ile	Ala	Asp	Phe	Gly	Leu	
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gcc	cgc	ggc	gtc	cac	cac	att	gac	tac	tat	aag	aaa	acc	agc	aac	ggc	1924
Ala	Arg	Gly	Val	His	His	Ile	Asp	Tyr	Tyr	Lys	Lys	Thr	Ser	Asn	Gly	
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cgc	ctg	cct	gtg	aag	tgg	atg	gcg	ccc	gag	gcc	ttg	ttt	gac	cgg	gtg	1972
Arg	Leu	Pro	Val	Lys	Trp	Met	Ala	Pro	Glu	Ala	Leu	Phe	Asp	Arg	Val	
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Tyr	Thr	His	Gln	Ser	Asp	Val	Trp	Ser	Phe	Gly	Ile	Pro	Leu	Trp	Glu	
		655					660					665				
atc	ttc	acc	ctc	ggg	ggc	tcc	ccg	tat	cct	ggc	atc	ccg	gtg	gag	gag	2068
Ile	Phe	Thr	Leu	Gly	Gly	Ser	Pro	Tyr	Pro	Gly	Ile	Pro	Val	Glu	Glu	
	670					675					680					
ctg	ttc	tcg	ctg	ctg	cgg	gag	gga	cat	cgg	atg	gac	cga	ccc	cca	cac	2116
Leu	Phe	Ser	Leu	Leu	Arg	Glu	Gly	His	Arg	Met	Asp	Arg	Pro	Pro	His	
685					690					695					700	
tgc	ccc	cca	gag	ctg	tac	ggg	ctg	atg	cgt	gag	tgc	tgg	cac	gca	gcg	2164
Cys	Pro	Pro	Glu	Leu	Tyr	Gly	Leu	Met	Arg	Glu	Cys	Trp	His	Ala	Ala	
				705					710					715		
ccc	tcc	cag	agg	cct	acc	ttc	aag	cag	ctg	gtg	gag	gcg	ctg	gac	aag	2212
Pro	Ser	Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Ala	Leu	Asp	Lys	
			720					725					730			
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Val	Leu	Leu	Ala	Val	Ser	Glu	Glu	Tyr	Leu	Asp	Leu	Arg	Leu	Thr	Phe	
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gga	ccc	tat	tcc	ccc	tct	ggg	ggg	gac	gcc	agc	agc	acc	tgc	tcc	tcc	2308
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Ser Asp Ser Val Phe	Ser His Asp Pro Leu	Pro Leu Gly Ser Ser Ser	
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His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg			
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Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn			
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Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln			
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Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser			
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225 230 235 240			
Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro			
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78			

Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu Leu Leu Cys Lys
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 Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Ile Val
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 Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro Tyr Val Gln Val
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 Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu Val Leu Tyr Leu
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 Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly
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 Asn Ser Ile Gly Leu Ser Tyr Gln Ser Ala Trp Leu Thr Val Leu Pro
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 Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln Gln Arg Pro Arg
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 Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala Pro Trp Pro Trp
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 Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly Arg Arg Ser Thr
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 Leu Trp Pro Asp Ser Ser Pro Arg Ser Gln Ala Leu Pro Ala Ser Gln
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 Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro Ala Ala Pro Pro
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 Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu Gly Glu Gly Cys
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 Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
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 Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
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 Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu Gly Val Cys Thr
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 Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Gly Val
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 Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
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 Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
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 Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Ser Leu
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 Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His Cys Pro Pro Glu
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 Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys Val Leu Leu Ala
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 Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe Gly Pro Tyr Ser
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Gly	Arg	Val	Arg	Gly	Trp	Arg	Gly	Arg	Leu	Glu	Ile	Ala	Ser	Phe	Leu		
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Pro	Glu	Asp	Ala	Gly	Arg	Tyr	Leu	Cys	Pro	Ala	Arg	Gly	Ser	Met	Ile		
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Ser	Tyr	Pro	Gln	Gln	Ala	Pro	Tyr	Trp	Thr	His	Pro	Gln	Arg	Met	Glu		
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Lys	Lys	Leu	His	Ala	Val	Pro	Ala	Gly	Asn	Thr	Val	Lys	Phe	Arg	Cys		
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Pro	Ala	Ala	Gly	Asn	Pro	Thr	Pro	Thr	Ile	Arg	Trp	Leu	Lys	Asp	Gly		
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Gln	Ala	Phe	His	Gly	Glu	Asn	Arg	Ile	Gly	Gly	Ile	Arg	Leu	Arg	His		
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Gln	His	Trp	Ser	Leu	Val	Met	Glu	Ser	Val	Val	Pro	Ser	Asp	Arg	Gly		
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Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu	
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Thr	Val	Leu	Pro	Val	Arg	Gly	Gln	Arg	Arg	Thr	Pro	His	Gly	Pro	Gln	
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Ser	Pro	Ala	Ser	Leu	Trp	Pro	Asp	Ser	Ser	Pro	Trp	Ser	Gln	Thr	Leu	
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Lys	Asp	Asn	Ala	Ser	Asp	Lys	Asp	Leu	Ala	Asp	Leu	Val	Ser	Glu	Met	
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Glu	Val	Met	Lys	Leu	Ile	Gly	Arg	His	Lys	Asn	Ile	Ile	Asn	Leu	Leu	
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Phe Pro Val Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln	
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Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu	
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atc ttc acc ctc ggg ggc tcc ccg tat cct ggc atc ccg gtg gag gag	2068
Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu	
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Leu Phe Ser Leu Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His	
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Cys Pro Pro Glu Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala	
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Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys	
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Val Leu Leu Ala Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe	
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Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala Glu Arg Gly Gly
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His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg
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Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu Pro Glu Asp Ala
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Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn
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Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser Asn Asp Asp Glu
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Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln
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Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu Lys Lys Leu His
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Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys Pro Ala Ala Gly
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Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly Gln Ala Phe His
180 185 190

Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser
195 200 205

Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Thr Tyr Thr Cys
210 215 220

Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn Tyr Leu Leu Asp
225 230 235 240

Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
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Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Ile Val
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Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro Tyr Val Gln Val
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Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu Val Leu Tyr Leu
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Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly
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 Asn Ser Ile Gly Leu Ser Tyr Gln Ser Ala Trp Leu Thr Val Leu Pro
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 Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln Gln Arg Pro Arg
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 Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met Asp Pro Ala Arg
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 Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
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 Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
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 Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu Gly Val Cys Thr
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 Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala Ala Lys Gly Asn
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 Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser Phe Pro Val Leu
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 Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln Tyr Leu Glu Ser
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 Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr
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 Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Gly Val
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 His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
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 Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
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Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
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 Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Ser Leu
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 Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys Val Leu Leu Ala
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 Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe Gly Pro Tyr Ser
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 Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser Ser Asp Ser Val
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cct gag gat gct ggc cgc tac ctc tgc ccg gca cga ggc tcc atg atc 340
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Val	Leu	Gln	Asn	Leu	Thr	Leu	Ile	Thr	Gly	Asp	Ser	Leu	Thr	Ser	Ser	
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Ser	Tyr	Pro	Gln	Gln	Ala	Pro	Tyr	Trp	Thr	His	Pro	Gln	Arg	Met	Glu	
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		495					500					505				
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Glu	Val	Met	Lys	Leu	Ile	Gly	Arg	His	Lys	Asn	Ile	Ile	Asn	Leu	Leu	
	510					515					520					
ggt	gtc	tgc	acc	cag	gaa	ggg	ccc	ctg	tac	gtg	atc	gtg	gag	tgc	gcc	1636
Gly	Val	Cys	Thr	Gln	Glu	Gly	Pro	Leu	Tyr	Val	Ile	Val	Glu	Cys	Ala	
525					530					535					540	
gcc	aag	gga	aac	ctg	cgg	gag	ttc	ctg	cgg	gcc	cgg	cgc	ccc	cca	ggc	1684
Ala	Lys	Gly	Asn	Leu	Arg	Glu	Phe	Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly	
				545					550					555		
ccc	gac	ctc	agc	ccc	gac	ggt	cct	cgg	agc	agt	gag	ggg	ccg	ctc	tcc	1732
Pro	Asp	Leu	Ser	Pro	Asp	Gly	Pro	Arg	Ser	Ser	Glu	Gly	Pro	Leu	Ser	
			560					565					570			
ttc	cca	gtc	ctg	gtc	tcc	tgc	gcc	tac	cag	gtg	gcc	cga	ggc	atg	cag	1780
Phe	Pro	Val	Leu	Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Gln	
		575					580					585				
tat	ctg	gag	tcc	cgg	aag	tgt	atc	cac	cgg	gac	ctg	gct	gcc	cgc	aat	1828
Tyr	Leu	Glu	Ser	Arg	Lys	Cys	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	
	590					595					600					

gtg	ctg	gtg	act	gag	gac	aat	gtg	atg	aag	att	gct	gac	ttt	ggg	ctg	1876
Val	Leu	Val	Thr	Glu	Asp	Asn	Val	Met	Lys	Ile	Ala	Asp	Phe	Gly	Leu	
605					610					615					620	
gcc	cgc	ggc	gtc	cac	cac	att	gac	tac	tat	aag	aaa	acc	agc	aac	ggc	1924
Ala	Arg	Gly	Val	His	His	Ile	Asp	Tyr	Tyr	Lys	Lys	Thr	Ser	Asn	Gly	
				625					630					635		
cgc	ctg	cct	gtg	aag	tgg	atg	gcg	ccc	gag	gcc	ttg	ttt	gac	cgg	gtg	1972
Arg	Leu	Pro	Val	Lys	Trp	Met	Ala	Pro	Glu	Ala	Leu	Phe	Asp	Arg	Val	
			640					645					650			
tac	aca	cac	cag	agt	gac	gtg	tgg	tct	ttt	ggg	atc	ccg	cta	tgg	gag	2020
Tyr	Thr	His	Gln	Ser	Asp	Val	Trp	Ser	Phe	Gly	Ile	Pro	Leu	Trp	Glu	
		655					660					665				
atc	ttc	acc	ctc	ggg	ggc	tcc	ccg	tat	cct	ggc	atc	ccg	gtg	gag	gag	2068
Ile	Phe	Thr	Leu	Gly	Gly		Pro	Tyr	Pro	Gly	Ile	Pro	Val	Glu	Glu	
	670					675					680					
ctg	ttc	tcg	ctg	ctg	cgg	gag	gga	cat	cgg	atg	gac	cga	ccc	cca	cac	2116
Leu	Phe	Ser	Leu	Leu	Arg	Glu	Gly	His	Arg	Met	Asp	Arg	Pro	Pro	His	
685					690					695					700	
tgc	ccc	cca	gag	ctg	tac	ggg	ctg	atg	cgt	gag	tgc	tgg	cac	gca	gcg	2164
Cys	Pro	Pro	Glu	Leu	Tyr	Gly	Leu	Met	Arg	Glu	Cys	Trp	His	Ala	Ala	
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ccc	tcc	cag	agg	cct	acc	ttc	aag	cag	ctg	gtg	gag	gcg	ctg	gac	aag	2212
Pro	Ser	Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Ala	Leu	Asp	Lys	
			720					725					730			
gtc	ctg	ctg	gcc	gtc	tct	gag	gag	tac	ctc	gac	ctc	cgc	ctg	gcc	ttc	2260
Val	Leu	Leu	Ala	Val	Ser	Glu	Glu	Tyr	Leu	Asp	Leu	Arg	Leu	Ala	Phe	
			735				740					745				
gga	ccc	tat	tcc	ccc	tct	ggt	ggg	gac	gcc	agc	agc	acc	tgc	tcc	tcc	2308
Gly	Pro	Tyr	Ser	Pro	Ser	Gly	Gly	Asp	Ala	Ser	Ser	Thr	Cys	Ser	Ser	
	750					755					760					
agc	gat	tct	gtc	ttc	agc	cac	gac	ccc	ctg	cca	ttg	gga	tcc	agc	tcc	2356
Ser	Asp	Ser	Val	Phe	Ser	His	Asp	Pro	Leu	Pro	Leu	Gly	Ser	Ser	Ser	
765					770				775						780	
ttc	ccc	ttc	ggg	tct	ggg	gtg	cag	aca								2383
Phe	Pro	Phe	Gly	Ser	Gly	Val	Gln	Thr								
				785												

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<211> 789

<212> PRT

<213> Homo sapiens

<400> 30

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Pro	Pro	Val	Ser	Ser	Leu	Glu	Ala	Ser	Glu	Glu	Val	Glu	Leu	Glu	Pro	
			20					25					30			

Cys	Leu	Ala	Pro	Ser	Leu	Glu	Gln	Gln	Glu	Gln	Glu	Leu	Thr	Val	Ala	
		35					40					45				

Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala Glu Arg Gly Gly
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 His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg
 65 70 75 80
 Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu Pro Glu Asp Ala
 85 90 95
 Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn
 100 105 110
 Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser Asn Asp Asp Glu
 115 120 125
 Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln
 130 135 140
 Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu Lys Lys Leu His
 145 150 155 160
 Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys Pro Ala Ala Gly
 165 170 175
 Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly Gln Ala Phe His
 180 185 190
 Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser
 195 200 205
 Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Thr Tyr Thr Cys
 210 215 220
 Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn Tyr Leu Leu Asp
 225 230 235 240
 Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
 245 250 255
 Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu Leu Leu Cys Lys
 260 265 270
 Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Ile Val
 275 280 285
 Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro Tyr Val Gln Val
 290 295 300
 Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu Val Leu Tyr Leu
 305 310 315 320
 Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly
 325 330 335
 Asn Ser Ile Gly Leu Ser Tyr Gln Ser Ala Trp Leu Thr Val Leu Pro
 340 345 350
 Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln Gln Arg Pro Arg
 355 360 365
 Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala Pro Trp Pro Trp
 370 375 380

Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly Arg Arg Ser Thr
 385 390 395 400
 Ala Gly Thr Pro Ala Arg Pro Pro Leu Cys Arg Ser Ser Pro Ala Ser
 405 410 415
 Leu Trp Pro Asp Ser Ser Pro Trp Ser Gln Ala Leu Pro Ala Ser Gln
 420 425 430
 Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro Ala Ala Pro Pro
 435 440 445
 Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu Gly Glu Gly Cys
 450 455 460
 Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met Asp Pro Ala Arg
 465 470 475 480
 Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
 485 490 495
 Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
 500 505 510
 Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu Gly Val Cys Thr
 515 520 525
 Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala Ala Lys Gly Asn
 530 535 540
 Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Pro Asp Leu Ser
 545 550 555 560
 Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser Phe Pro Val Leu
 565 570 575
 Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln Tyr Leu Glu Ser
 580 585 590
 Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr
 595 600 605
 Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Gly Val
 610 615 620
 His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
 625 630 635 640
 Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
 645 650 655
 Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
 660 665 670
 Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Ser Leu
 675 680 685
 Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His Cys Pro Pro Glu
 690 695 700
 Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala Pro Ser Gln Arg
 705 710 715 720

Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys Val Leu Leu Ala
725 730 735

Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Ala Phe Gly Pro Tyr Ser
740 745 750

Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser Ser Asp Ser Val
755 760 765

Phe Ser His Asp Pro Leu Pro Leu Gly Ser Ser Ser Phe Pro Phe Gly
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Ser Gly Val Gln Thr
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<212> DNA

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<400> 31

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Ser Val Pro Gly Pro Pro Val Ser Ser Leu Glu Ala Ser Glu Glu Val
15 20 25

gag ctt gag ccc tgc ctg gct ccc agc ctg gag cag caa gag cag gag 148
Glu Leu Glu Pro Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Glu
30 35 40

ctg aca gta gcc ctt ggg cag cct gtg cgg ctg tgc tgt ggg cgg gct 196
Leu Thr Val Ala Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala
45 50 55 60

gag cgt ggt ggc cac tgg tac aag gag ggc agt cgc ctg gca cct gct 244
Glu Arg Gly Gly His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala
65 70 75

ggc cgt gta cgg ggc tgg agg ggc cgc cta gag att gcc agc ttc cta 292
Gly Arg Val Arg Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu
80 85 90

cct gag gat gct ggc cgc tac ctc tgc ccg gca cga ggc tcc atg atc 340
Pro Glu Asp Ala Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile
95 100 105

gtc ctg cag aat ctc acc ttg att aca ggt gac tcc ttg acc tcc agc 388
Val Leu Gln Asn Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser
110 115 120

aac gat gat gag gac ccc gag tcc cat agg gac ctc tcg aat agg cac 436
Asn Asp Asp Glu Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His
125 130 135 140

agt tac ccc cag caa gca ccc tac tgg aca cac ccc cag cgc atg gag 484
92

Ser	Tyr	Pro	Gln	Gln	Ala	Pro	Tyr	Trp	Thr	His	Pro	Gln	Arg	Met	Glu	
				145					150					155		
aag	aaa	ctg	cat	gca	gta	cct	gcg	ggg	aac	acc	gtc	aag	ttc	cgc	tgt	532
Lys	Lys	Leu	His	Ala	Val	Pro	Ala	Gly	Asn	Thr	Val	Lys	Phe	Arg	Cys	
			160					165					170			
cca	gct	gca	ggc	aac	ccc	acg	ccc	acc	atc	cgc	tgg	ctt	aag	gat	gga	580
Pro	Ala	Ala	Gly	Asn	Pro	Thr	Pro	Thr	Ile	Arg	Trp	Leu	Lys	Asp	Gly	
		175						180				185				
cag	gcc	ttt	cat	ggg	gag	aac	cgc	att	gga	ggc	att	cgg	ctg	cgc	cat	628
Gln	Ala	Phe	His	Gly	Glu	Asn	Arg	Ile	Gly	Gly	Ile	Arg	Leu	Arg	His	
	190					195					200					
cag	cac	tgg	agt	ctc	gtg	atg	gag	agc	gtg	gtg	ccc	tcg	gac	cgc	ggc	676
Gln	His	Trp	Ser	Leu	Val	Met	Glu	Ser	Val	Val	Pro	Ser	Asp	Arg	Gly	
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aca	tac	acc	tgc	ctg	gta	gag	aac	gct	gtg	ggc	agc	atc	cgt	tat	aac	724
Thr	Tyr	Thr	Cys	Leu	Val	Glu	Asn	Ala	Val	Gly	Ser	Ile	Arg	Tyr	Asn	
				225					230					235		
tac	ctg	cta	gat	gtg	ctg	gag	cgg	tcc	ccg	cac	cgg	ccc	atc	ctg	cag	772
Tyr	Leu	Leu	Asp	Val	Leu	Glu	Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Gln	
			240					245					250			
gcc	ggg	ctc	ccg	gcc	aac	acc	aca	gcc	gtg	gtg	ggc	agc	gac	gtg	gag	820
Ala	Gly	Leu	Pro	Ala	Asn	Thr	Thr	Ala	Val	Val	Gly	Ser	Asp	Val	Glu	
		255					260					265				
ccg	ctg	tgc	aag	gtg	tac	agc	gat	gcc	cag	ccc	cac	atc	cag	tgg	ctg	868
Pro	Leu	Cys	Lys	Val	Tyr	Ser	Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu	
	270					275					280					
aag	cac	atc	gtc	atc	aac	ggc	agc	agc	ttc	gga	gcc	gac	ggg	ttc	ccc	916
Lys	His	Ile	Val	Ile	Asn	Gly	Ser	Ser	Phe	Gly	Ala	Asp	Gly	Phe	Pro	
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tat	gtg	caa	gtc	cta	aag	act	gca	gac	atc	aat	agc	tca	gag	gtg	gag	964
Tyr	Val	Gln	Val	Leu	Lys	Thr	Ala	Asp	Ile	Asn	Ser	Ser	Glu	Val	Glu	
				305					310					315		
gtc	ctg	tac	ctg	cgg	aac	gtg	tca	gcc	gag	gac	gca	ggc	gag	tac	acc	1012
Val	Leu	Tyr	Leu	Arg	Asn	Val	Ser	Ala	Glu	Asp	Ala	Gly	Glu	Tyr	Thr	
			320					325					330			
tgc	ctc	gca	ggc	aat	tcc	atc	ggc	ctc	tcc	tac	cag	tct	gcc	tgg	ctc	1060
Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu	
		335					340					345				
acg	gtg	ctg	cca	gtg	cga	ggg	cag	agg	agg	acc	cca	cat	gga	ccg	cag	1108
Thr	Val	Leu	Pro	Val	Arg	Gly	Gln	Arg	Arg	Thr	Pro	His	Gly	Pro	Gln	
	350					355					360					
cag	cgc	ccg	agg	cca	ggg	ata	cgg	aca	tca	tcc	tgt	acg	cgt	cgg	gct	1156
Gln	Arg	Pro	Arg	Pro	Gly	Ile	Arg	Thr	Ser	Ser	Cys	Thr	Arg	Arg	Ala	
365					370				375						380	
ccc	tgg	cct	tgg	ctg	tgc	tcc	tgc	tgc	tgg	ccg	ggc	tgt	atc	gag	ggc	1204
Pro	Trp	Pro	Trp	Leu	Cys	Ser	Cys	Cys	Trp	Pro	Gly	Cys	Ile	Glu	Gly	
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agg cgc tcc acg gcc ggc acc ccc gcc cgc ccg cca ctg tgc aga agc	1252
Arg Arg Ser Thr Ala Gly Thr Pro Ala Arg Pro Pro Leu Cys Arg Ser	
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tct ccc gct tcc ctg tgg ccc gac agt tct ccc tgg agt cag gct ctt	1300
Ser Pro Ala Ser Leu Trp Pro Asp Ser Ser Pro Trp Ser Gln Ala Leu	
415 420 425	
ccg gca agt caa gct cat ccc tgg tac gag gcg tgc gtc tct cct cca	1348
Pro Ala Ser Gln Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro	
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gcg gcc ccg cct tgc tgc ccg gcc tgc ctg gtg ctt ggg aag ccc cta	1396
Ala Ala Pro Pro Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu	
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ggc gag ggc tgc ttt ggc cag gta gta cgt gca gag gcc ttt ggc atg	1444
Gly Glu Gly Cys Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met	
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gac cct gcc ccg cct gac caa gcc agc act gtg gcc gtc aag atg ctc	1492
Asp Pro Ala Arg Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu	
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aaa gac aac gcc tct gac aag gac ctg gcc gac ctg gtc tcg gag atg	1540
Lys Asp Asn Ala Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met	
495 500 505	
gag gtg atg aag ctg atc ggc cga cac aag aac atc atc aac ctg ctt	1588
Glu Val Met Lys Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu	
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ggt gtc tgc acc cag gaa ggg ccc ctg tac gtg atc gtg gag tgc gcc	1636
Gly Val Cys Thr Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala	
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gcc aag gga aac ctg ccg gag ttc ctg ccg gcc ccg cgc ccc cca ggc	1684
Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly	
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Pro Asp Leu Ser Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser	
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Phe Pro Val Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln	
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Tyr Leu Glu Ser Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn	
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Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu	
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Ala Arg Gly Val His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly	
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cgc ctg cct gtg aag tgg atg gcg ccc gag gcc ttg ttt gac ccg gtg	1972
Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val	
640 645 650	

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Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu	
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atc ttc acc ctc ggg ggc tcc ccg tat cct ggc atc ccg gtg gag gag	2068
Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu	
670 675 680	
ctg ttc tgc ctg ctg cgg gag gga cat cgg atg gac cga ccc cca cac	2116
Leu Phe Ser Leu Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His	
685 690 695 700	
tgc ccc cca gag ctg tac ggg ctg atg cgt gag tgc tgg cac gca gcg	2164
Cys Pro Pro Glu Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala	
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Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys	
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gtc ctg ctg gcc gtc tct gag gag tac ctc gac ctc cgc ctg acc ttc	2260
Val Leu Leu Ala Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe	
735 740 745	
gga ccc tat tcc ccc tct ggt ggg gac gcc agc agc acc tgc tcc tcc	2308
Gly Pro Tyr Ser Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser	
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agc gat tct gtc ttc agc cac gac ccc ctg cca ttg gga tcc agc tcc	2356
Ser Asp Ser Val Phe Ser His Asp Pro Leu Pro Leu Gly Ser Ser Ser	
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Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Glu Leu Thr Val Ala	
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Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala Glu Arg Gly Gly	
50 55 60	
His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg	
65 70 75 80	
Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu Pro Glu Asp Ala	
85 90 95	
Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn	
100 105 110	

Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser Asn Asp Asp Glu
 115 120 125
 Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln
 130 135 140
 Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu Lys Lys Leu His
 145 150 155 160
 Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys Pro Ala Ala Gly
 165 170 175
 Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly Gln Ala Phe His
 180 185 190
 Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser
 195 200 205
 Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly Thr Tyr Thr Cys
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 Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn Tyr Leu Leu Asp
 225 230 235 240
 Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
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 Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu Pro Leu Cys Lys
 260 265 270
 Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Ile Val
 275 280 285
 Ile Asn Gly Ser Ser Phe Gly Ala Asp Gly Phe Pro Tyr Val Gln Val
 290 295 300
 Leu Lys Thr Ala Asp Ile Asn Ser Ser Glu Val Glu Val Leu Tyr Leu
 305 310 315 320
 Arg Asn Val Ser Ala Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly
 325 330 335
 Asn Ser Ile Gly Leu Ser Tyr Gln Ser Ala Trp Leu Thr Val Leu Pro
 340 345 350
 Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln Gln Arg Pro Arg
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 Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala Pro Trp Pro Trp
 370 375 380
 Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly Arg Arg Ser Thr
 385 390 395 400
 Ala Gly Thr Pro Ala Arg Pro Pro Leu Cys Arg Ser Ser Pro Ala Ser
 405 410 415
 Leu Trp Pro Asp Ser Ser Pro Trp Ser Gln Ala Leu Pro Ala Ser Gln
 420 425 430
 Ala His Pro Trp Tyr Glu Ala Cys Val Ser Pro Pro Ala Ala Pro Pro
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Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu Gly Glu Gly Cys
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 Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met Asp Pro Ala Arg
 465 470 475 480
 Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu Lys Asp Asn Ala
 485 490 495
 Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met Glu Val Met Lys
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 Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu Gly Val Cys Thr
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 Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala Ala Lys Gly Asn
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 Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Pro Asp Leu Ser
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 Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser Phe Pro Val Leu
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 Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln Tyr Leu Glu Ser
 580 585 590
 Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr
 595 600 605
 Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Gly Val
 610 615 620
 His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
 625 630 635 640
 Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
 645 650 655
 Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
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 Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Ser Leu
 675 680 685
 Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His Cys Pro Pro Glu
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 Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala Pro Ser Gln Arg
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 Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys Val Leu Leu Ala
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 Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe Gly Pro Tyr Ser
 740 745 750
 Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser Ser Asp Ser Val
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Ser Val Pro Gly Pro Pro Val Ser Ser Leu Glu Ala Ser Glu Glu Val
15 20 25

gag ctt gag ccc tgc ctg gct ccc agc ctg gag cag caa gag cag gag 148
Glu Leu Glu Pro Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Glu
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ctg aca gta gcc ctt ggg cag cct gtg cgg ctg tgc tgt ggg cgg gct 196
Leu Thr Val Ala Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala
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gag cgt ggt ggc cac tgg tac aag gag ggc agt cgc ctg gca cct gct 244
Glu Arg Gly Gly His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala
65 70 75

ggc cgt gta cgg ggc tgg agg ggc cgc cta gag att gcc agc ttc cta 292
Gly Arg Val Arg Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu
80 85 90

cct gag gat gct ggc cgc tac ctc tgc ccg gca cga ggc tcc atg atc 340
Pro Glu Asp Ala Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile
95 100 105

gtc ctg cag aat ctc acc ttg att aca ggt gac tcc ttg acc tcc agc 388
Val Leu Gln Asn Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser
110 115 120

aac gat gat gag gac ccc gag tcc cat agg gac ctc tcg aat agg cac 436
Asn Asp Asp Glu Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His
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agt tac ccc cag caa gca ccc tac tgg aca cac ccc cag cgc atg gag 484
Ser Tyr Pro Gln Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu
145 150 155

aag aaa ctg cat gca gta cct gcg ggg aac acc gtc aag ttc cgc tgt 532
Lys Lys Leu His Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys
160 165 170

cca gct gca ggc aac ccc acg ccc acc atc cgc tgg ctt aag gat gga 580
Pro Ala Ala Gly Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly
175 180 185

cag gcc ttt cat ggg gag aac cgc att gga ggc att cgg ctg cgc cat 628
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Gln	Ala	Phe	His	Gly	Glu	Asn	Arg	Ile	Gly	Gly	Ile	Arg	Leu	Arg	His		
190						195					200						
cag	cac	tgg	agt	ctc	gtg	atg	gag	agc	gtg	gtg	ccc	tcg	gac	cgc	ggc	676	
Gln	His	Trp	Ser	Leu	Val	Met	Glu	Ser	Val	Val	Pro	Ser	Asp	Arg	Gly		
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aca	tac	acc	tgc	ctg	gta	gag	aac	gct	gtg	ggc	agc	atc	cgt	tat	aac	724	
Thr	Tyr	Thr	Cys	Leu	Val	Glu	Asn	Ala	Val	Gly	Ser	Ile	Arg	Tyr	Asn		
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Tyr	Leu	Leu	Asp	Val	Leu	Glu	Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Gln		
			240					245					250				
gcc	ggg	ctc	ccg	gcc	aac	acc	aca	gcc	gtg	gtg	ggc	agc	gac	gtg	gag	820	
Ala	Gly	Leu	Pro	Ala	Asn	Thr	Thr	Ala	Val	Val	Gly	Ser	Asp	Val	Glu		
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ctg	ctg	tgc	aag	gtg	tac	agc	gat	gcc	cag	ccc	cac	atc	cag	tgg	ctg	868	
Leu	Leu	Cys	Lys	Val	Tyr	Ser	Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu		
						275					280						
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Lys	His	Ile	Val	Ile	Asn	Gly	Ser	Ser	Phe	Gly	Ala	Asp	Gly	Phe	Pro		
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Tyr	Val	Gln	Val	Leu	Lys	Thr	Ala	Asp	Ile	Asn	Ser	Ser	Glu	Val	Glu		
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gtc	ctg	tac	ctg	cgg	aac	gtg	tca	gcc	gag	gac	gca	ggc	gag	tac	acc	1012	
Val	Leu	Tyr	Leu	Arg	Asn	Val	Ser	Ala	Glu	Asp	Ala	Gly	Glu	Tyr	Thr		
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tgc	ctc	gca	ggc	aat	tcc	atc	ggc	ctc	tcc	tac	cag	tct	gcc	tgg	ctc	1060	
Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu		
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Thr	Val	Leu	Pro	Val	Arg	Gly	Gln	Arg	Arg	Thr	Pro	His	Gly	Pro	Gln		
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Gln	Arg	Pro	Arg	Pro	Gly	Ile	Arg	Thr	Ser	Ser	Cys	Thr	Arg	Arg	Ala		
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Pro	Trp	Pro	Trp	Leu	Cys	Ser	Cys	Cys	Trp	Pro	Gly	Cys	Ile	Glu	Gly		
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Arg	Arg	Ser	Thr	Ala	Gly	Thr	Pro	Ala	Arg	Pro	Pro	Leu	Cys	Arg	Ser		
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Ser	Pro	Ala	Ser	Leu	Trp	Pro	Asp	Ser	Ser	Pro	Trp	Ser	Gln	Ala	Leu		
		415					420					425					
ccg	gca	agt	caa	gct	cat	ccc	tgg	tac	gag	gcg	tgc	gtc	tct	cct	cca	1348	
Pro	Ala	Ser	Gln	Ala	His	Pro	Trp	Tyr	Glu	Ala	Cys	Val	Ser	Pro	Pro		
	430					435					440						

gcg gcc ccg cct tgc tgc ccg gcc tgc ctg gtg ctt ggg aag ccc cta	1396
Ala Ala Pro Pro Cys Ser Pro Ala Ser Leu Val Leu Gly Lys Pro Leu	
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ggc gag ggc tgc ttt ggc cag gta gta cgt gca gag gcc ttt ggc atg	1444
Gly Glu Gly Cys Phe Gly Gln Val Val Arg Ala Glu Ala Phe Gly Met	
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gac cct gcc cgg cct gac caa gcc agc act gtg gcc gtc aag atg ctc	1492
Asp Pro Ala Arg Pro Asp Gln Ala Ser Thr Val Ala Val Lys Met Leu	
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aaa gac aac gcc tct gac aag gac ctg gcc gac ctg gtc tgc gag atg	1540
Lys Asp Asn Ala Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met	
495 500 505	
gag gtg atg aag ctg atc ggc cga cac aag aac atc atc aac ctg ctt	1588
Glu Val Met Lys Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu	
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ggg gtc tgc acc cag gaa ggg ccc ctg tac gtg atc gtg gag tgc gcc	1636
Gly Val Cys Thr Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala	
525 530 535 540	
gcc aag gga aac ctg cgg gag ttc ctg cgg gcc cgg cgc ccc cca ggc	1684
Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly	
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Pro Asp Leu Ser Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser	
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Phe Pro Val Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln	
575 580 585	
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Tyr Leu Glu Ser Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn	
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Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu	
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gcc cgc ggc gtc cac cac att gac tac tat aag aaa acc agc aac ggc	1924
Ala Arg Gly Val His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly	
625 630 635	
cgc ctg cct gtg aag tgg atg gcg ccc gag gcc ttg ttt gac cgg gtg	1972
Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val	
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Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu	
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atc ttc acc ctc ggg ggc tcc ccg tat cct ggc atc ccg gtg gag gag	2068
Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu	
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ctg ttc tgc ctg ctg cgg gag gga cat cgg atg gac cga ccc cca cac	2116
Leu Phe Ser Leu Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His	
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tgc ccc cca gag ctg tac ggg ctg atg cgt gag tgc tgg cac gca gcg	2164
Cys Pro Pro Glu Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala	
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ccc ccc cag agg cct acc ttc aag cag ctg gtg gag gcg ctg gac aag	2212
Pro Pro Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys	
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gtc ctg ctg gcc gtc tct gag gag tac ctc gac ctc cgc ctg acc ttc	2260
Val Leu Leu Ala Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe	
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gga ccc tat tcc ccc tct ggt ggg gac gcc agc agc acc tgc tcc tcc	2308
Gly Pro Tyr Ser Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser	
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agc gat tct gtc ttc agc cac gac ccc ctg cca ttg gga tcc agc tcc	2356
Ser Asp Ser Val Phe Ser His Asp Pro Leu Pro Leu Gly Ser Ser Ser	
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Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala Glu Arg Gly Gly	
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His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg	
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Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu Pro Glu Asp Ala	
85 90 95	
Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn	
100 105 110	
Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser Asn Asp Asp Glu	
115 120 125	
Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln	
130 135 140	
Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu Lys Lys Leu His	
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Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys Pro Ala Ala Gly	
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101	

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Leu	Val	Glu	Asn	Ala	Val	Gly	Ser	Ile	Arg	Tyr	Asn	Tyr	Leu	Leu	Asp		
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Val	Leu	Glu	Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Gln	Ala	Gly	Leu	Pro		
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			260					265					270				
Val	Tyr	Ser	Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu	Lys	His	Ile	Val		
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Val	Arg	Gly	Gln	Arg	Arg	Thr	Pro	His	Gly	Pro	Gln	Gln	Arg	Pro	Arg		
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Pro	Gly	Ile	Arg	Thr	Ser	Ser	Cys	Thr	Arg	Arg	Ala	Pro	Trp	Pro	Trp		
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Ala	His	Pro	Trp	Tyr	Glu	Ala	Cys	Val	Ser	Pro	Pro	Ala	Ala	Pro	Pro		
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Cys	Ser	Pro	Ala	Ser	Leu	Val	Leu	Gly	Lys	Pro	Leu	Gly	Glu	Gly	Cys		
	450					455					460						
Phe	Gly	Gln	Val	Val	Arg	Ala	Glu	Ala	Phe	Gly	Met	Asp	Pro	Ala	Arg		
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Pro	Asp	Gln	Ala	Ser	Thr	Val	Ala	Val	Lys	Met	Leu	Lys	Asp	Asn	Ala		
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Ser	Asp	Lys	Asp	Leu	Ala	Asp	Leu	Val	Ser	Glu	Met	Glu	Val	Met	Lys		
			500					505					510				

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 Gln Glu Gly Pro Leu Tyr Val Ile Val Glu Cys Ala Ala Lys Gly Asn
 530 535 540
 Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Pro Asp Leu Ser
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 Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser Phe Pro Val Leu
 565 570 575
 Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln Tyr Leu Glu Ser
 580 585 590
 Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr
 595 600 605
 Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Gly Val
 610 615 620
 His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
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 Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
 645 650 655
 Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
 660 665 670
 Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Ser Leu
 675 680 685
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 Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys Val Leu Leu Ala
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 Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe Gly Pro Tyr Ser
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Ser Val Pro Gly Pro Pro Val Ser Ser Leu Glu Ala Ser Glu Glu Val	
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Glu Leu Glu Pro Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Glu	
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ctg aca gta gcc ctt ggg cag cct gtg cgg ctg tgc tgt ggg cgg gct	196
Leu Thr Val Ala Leu Gly Gln Pro Val Arg Leu Cys Cys Gly Arg Ala	
45 50 55 60	
gag cgt ggt ggc cac tgg tac aag gag ggc agt cgc ctg gca cct gct	244
Glu Arg Gly Gly His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala	
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Gly Arg Val Arg Gly Trp Arg Gly Arg Leu Glu Ile Ala Ser Phe Leu	
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cct gag gat gct ggc cgc tac ctc tgc ccg gca cga ggc tcc atg atc	340
Pro Glu Asp Ala Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile	
95 100 105	
gtc ctg cag aat ctc acc ttg att aca ggt gac tcc ttg acc tcc agc	388
Val Leu Gln Asn Leu Thr Leu Ile Thr Gly Asp Ser Leu Thr Ser Ser	
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aac gat gat gag gac ccc gag tcc cat agg gac ctc tcg aat agg cac	436
Asn Asp Asp Glu Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His	
125 130 135 140	
agt tac ccc cag caa gca ccc tac tgg aca cac ccc cag cgc atg gag	484
Ser Tyr Pro Gln Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu	
145 150 155	
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Lys Lys Leu His Ala Val Pro Ala Gly Asn Thr Val Lys Phe Arg Cys	
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Pro Ala Ala Gly Asn Pro Thr Pro Thr Ile Arg Trp Leu Lys Asp Gly	
175 180 185	
cag gcc ttt cat ggg gag aac cgc att gga ggc att cgg ctg cgc cat	628
Gln Ala Phe His Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His	
190 195 200	
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Gln His Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly	
205 210 215 220	
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Thr Tyr Thr Cys Leu Val Glu Asn Ala Val Gly Ser Ile Arg Tyr Asn	
225 230 235	
tac ctg cta gat gtg ctg gag cgg tcc ccg cac cgg ccc atc ctg cgg	772
104	

Tyr	Leu	Leu	Asp	Val	Leu	Glu	Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Arg		
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		255					260					265					
ctg	ctg	tgc	aag	gtg	tac	agc	gat	gcc	cag	ccc	cac	atc	cag	tgg	ctg	868	
Leu	Leu	Cys	Lys	Val	Tyr	Ser	Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu		
	270					275					280						
aag	cac	atc	gtc	atc	aac	ggc	agc	agc	ttc	gga	gcc	gac	ggg	ttc	ccc	916	
Lys	His	Ile	Val	Ile	Asn	Gly	Ser	Ser	Phe	Gly	Ala	Asp	Gly	Phe	Pro		
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Tyr	Val	Gln	Val	Leu	Lys	Thr	Ala	Asp	Ile	Asn	Ser	Ser	Glu	Val	Glu		
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Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu		
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Thr	Val	Leu	Pro	Val	Arg		Gln	Arg	Arg	Thr		His	Gly	Pro	Gln		
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Gln	Arg	Pro	Arg	Pro	Gly	Ile	Arg	Thr	Ser	Ser	Cys	Thr	Arg	Arg	Ala		
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Arg	Arg	Ser	Thr	Ala	Gly	Thr	Pro	Ala	Arg	Pro	Pro	Leu	Cys	Arg	Ser		
			400					405					410				
tct	ccc	gct	tcc	ctc	tgg	ccc	gac	agt	tct	ccc	tgg	agt	cag	gct	ctt	1300	
Ser	Pro	Ala	Ser	Leu	Trp	Pro	Asp	Ser	Ser	Pro	Trp	Ser	Gln	Ala	Leu		
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ccg	gca	agt	caa	gct	cat	ccc	tgg	tac	gag	gcg	tgc	gtc	tct	cct	cca	1348	
Pro	Ala	Ser	Gln	Ala	His	Pro	Trp	Tyr	Glu	Ala	Cys	Val	Ser	Pro	Pro		
		430				435					440						
gcg	gcc	ccg	cct	tgc	tcg	ccg	gcc	tcg	ctg	gtg	ctt	ggg	aag	ccc	cta	1396	
Ala	Ala	Pro	Pro	Cys	Ser	Pro	Ala	Ser	Leu	Val	Leu	Gly	Lys	Pro	Leu		
445					450				455						460		
ggc	gag	ggc	tgc	ttt	ggc	cag	gta	gta	cgt	gca	gag	gcc	ttt	ggc	atg	1444	
Gly	Glu	Gly	Cys	Phe	Gly	Gln	Val	Val	Arg	Ala	Glu	Ala	Phe	Gly	Met		
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gac	cct	gcc	cgg	cct	gac	caa	gcc	agc	act	gtg	gcc	gtc	aag	atg	ctc	1492	
Asp	Pro	Ala	Arg	Pro	Asp	Gln	Ala	Ser	Thr	Val	Ala	Val	Lys	Met	Leu		
			480					485					490				

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Lys Asp Asn Ala Ser Asp Lys Asp Leu Ala Asp Leu Val Ser Glu Met	
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Glu Val Met Lys Leu Ile Gly Arg His Lys Asn Ile Ile Asn Leu Leu	
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Pro Asp Leu Ser Pro Asp Gly Pro Arg Ser Ser Glu Gly Pro Leu Ser	
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Phe Pro Val Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln	
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Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu	
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Leu Phe Ser Leu Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His	
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Cys Pro Pro Glu Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala	
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Val Leu Leu Ala Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe	
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Gly Pro Tyr Ser Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser	
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Ser Asp Ser Val Phe Ser His Asp Pro Leu Pro Leu Gly Ser Ser Ser	
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Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile Val Leu Gln Asn	
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Asp Pro Glu Ser His Arg Asp Leu Ser Asn Arg His Ser Tyr Pro Gln	
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Gln Ala Pro Tyr Trp Thr His Pro Gln Arg Met Glu Lys Lys Leu His	
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Gly Glu Asn Arg Ile Gly Gly Ile Arg Leu Arg His Gln His Trp Ser	
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Val	Tyr	Ser 275	Asp	Ala	Gln	Pro	His 280	Ile	Gln	Trp	Leu	Lys 285	His	Ile	Val
Ile	Asn 290	Gly	Ser	Ser	Phe	Gly 295	Ala	Asp	Gly	Phe	Pro 300	Tyr	Val	Gln	Val
Leu 305	Lys	Thr	Ala	Asp	Ile 310	Asn	Ser	Ser	Glu	Val 315	Glu	Val	Leu	Tyr	Leu 320
Arg	Asn	Val	Ser	Ala 325	Glu	Asp	Ala	Gly	Glu 330	Tyr	Thr	Cys	Leu	Ala 335	Gly
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Ala	Gly	Thr	Pro	Ala 405	Arg	Pro	Pro	Leu	Cys 410	Arg	Ser	Ser	Pro	Ala 415	Ser
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Ala	His 435	Pro	Trp	Tyr	Glu	Ala	Cys 440	Val	Ser	Pro	Pro	Ala 445	Ala	Pro	Pro
Cys	Ser 450	Pro	Ala	Ser	Leu	Val 455	Leu	Gly	Lys	Pro	Leu 460	Gly	Glu	Gly	Cys
Phe 465	Gly	Gln	Val	Val	Arg 470	Ala	Glu	Ala	Phe	Gly 475	Met	Asp	Pro	Ala	Arg 480
Pro	Asp	Gln	Ala	Ser 485	Thr	Val	Ala	Val	Lys 490	Met	Leu	Lys	Asp	Asn 495	Ala
Ser	Asp	Lys	Asp 500	Leu	Ala	Asp	Leu	Val 505	Ser	Glu	Met	Glu	Val 510	Met	Lys
Leu	Ile	Gly 515	Arg	His	Lys	Asn	Ile 520	Ile	Asn	Leu	Leu	Gly 525	Val	Cys	Thr
Gln 530	Glu	Gly	Pro	Leu	Tyr	Val 535	Ile	Val	Glu	Cys	Ala 540	Ala	Lys	Gly	Asn
Leu 545	Arg	Glu	Phe	Leu	Arg 550	Ala	Arg	Arg	Pro	Pro 555	Gly	Pro	Asp	Leu	Ser 560
Pro	Asp	Gly	Pro	Arg 565	Ser	Ser	Glu	Gly	Pro 570	Leu	Ser	Phe	Pro	Val 575	Leu

Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Gln Tyr Leu Glu Ser
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 Arg Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr
 595 600 605
 Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Gly Val
 610 615 620
 His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
 625 630 635 640
 Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln
 645 650 655
 Ser Asp Val Trp Ser Phe Gly Ile Pro Leu Trp Glu Ile Phe Thr Leu
 660 665 670
 Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Ser Leu
 675 680 685
 Leu Arg Glu Gly His Arg Met Asp Arg Pro Pro His Cys Pro Pro Glu
 690 695 700
 Leu Tyr Gly Leu Met Arg Glu Cys Trp His Ala Ala Pro Ser Gln Arg
 705 710 715 720
 Pro Thr Phe Lys Gln Leu Val Glu Ala Leu Asp Lys Val Leu Leu Ala
 725 730 735
 Val Ser Glu Glu Tyr Leu Asp Leu Arg Leu Thr Phe Gly Pro Tyr Ser
 740 745 750
 Pro Ser Gly Gly Asp Ala Ser Ser Thr Cys Ser Ser Ser Asp Ser Val
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 Glu Leu Glu Pro Cys Leu Ala Pro Ser Leu Glu Gln Gln Glu Gln Glu
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cct gag gat gct ggc cgc tac ctc tgc ccg gca cga ggc tcc atg atc Pro Glu Asp Ala Gly Arg Tyr Leu Cys Pro Ala Arg Gly Ser Met Ile 95 100 105	340		
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Val	Leu	Tyr	Leu	Arg	Asn	Val	Ser	Ala	Glu	Asp	Ala	Gly	Glu	Tyr	Thr		
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Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Leu	Ser	Tyr	Gln	Ser	Ala	Trp	Leu		
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Thr	Val	Leu	Pro	Val	Arg		Gln	Arg	Arg	Thr	Pro	His	Gly	Pro	Gln		
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Gln	Arg	Pro	Arg	Pro	Gly	Ile	Arg	Thr	Ser	Ser	Cys	Thr	Arg	Arg	Ala		
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Pro	Trp	Pro	Trp	Leu	Cys	Ser	Cys	Cys	Trp	Pro	Gly	Cys	Ile	Glu	Gly		
				385					390					395			
agg	cgc	tcc	acg	gcc	ggc	acc	ccc	gcc	cgc	ccg	cca	ctg	tgc	aga	agc	1252	
Arg	Arg	Ser	Thr	Ala	Gly	Thr	Pro	Ala	Arg	Pro	Pro	Leu	Cys	Arg	Ser		
			400					405					410				
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Ser	Pro	Ala	Ser	Leu	Trp	Pro	Asp	Ser	Ser	Pro	Trp	Ser	Gln	Ala	Leu		
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Pro	Ala	Ser	Gln	Ala	His	Pro	Trp	Tyr	Glu	Ala	Cys	Val	Ser	Pro	Pro		
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		495					500					505					
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 His Trp Tyr Lys Glu Gly Ser Arg Leu Ala Pro Ala Gly Arg Val Arg
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 Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro
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 Ala Asn Thr Thr Ala Val Val Gly Ser Asp Val Glu Leu Leu Cys Lys
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 Val Arg Gly Gln Arg Arg Thr Pro His Gly Pro Gln Gln Arg Pro Arg
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 Pro Gly Ile Arg Thr Ser Ser Cys Thr Arg Arg Ala Pro Trp Pro Trp
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 Leu Cys Ser Cys Cys Trp Pro Gly Cys Ile Glu Gly Arg Arg Ser Thr
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 His His Ile Asp Tyr Tyr Lys Lys Thr Ser Asn Gly Arg Leu Pro Val
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 aat tat ttt gac tgg att agc tac cat gta gga agg cct ttt att tct 1730
 Asn Tyr Phe Asp Trp Ile Ser Tyr His Val Gly Arg Pro Phe Ile Ser
 560 565 570
 cag tac aat gta taaaattgtg atctctctct tcattctatt ctttttctct 1782
 Gln Tyr Asn Val
 575

caagagttcc atttaatgga aataaaacgg tataattaat aattctctag ggggggaaaaa 1842
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 Cys Leu Ala Lys Lys Tyr Thr His Leu Ser Cys Asp Lys Val Phe Cys
 35 40 45
 Gln Pro Trp Gln Arg Cys Ile Glu Gly Thr Cys Val Cys Lys Leu Pro
 50 55 60
 Tyr Gln Cys Pro Lys Asn Gly Thr Ala Val Cys Ala Thr Asn Arg Arg
 65 70 75 80
 Ser Phe Pro Thr Tyr Cys Gln Gln Lys Ser Leu Glu Cys Leu His Pro
 85 90 95
 Gly Thr Lys Phe Leu Asn Asn Gly Thr Cys Thr Ala Glu Gly Lys Phe
 100 105 110
 Ser Val Ser Leu Lys His Gly Asn Thr Asp Ser Glu Gly Ile Val Glu
 115 120 125
 Val Lys Leu Val Asp Gln Asp Lys Thr Met Phe Ile Cys Lys Ser Ser
 130 135 140

Trp	Ser	Met	Arg	Glu	Ala	Asn	Val	Ala	Cys	Leu	Asp	Leu	Gly	Phe	Gln	145	150	155	160
Gln	Gly	Ala	Asp	Thr	Gln	Arg	Arg	Phe	Lys	Leu	Ser	Asp	Leu	Ser	Ile	165	170		175
Asn	Ser	Thr	Glu	Cys	Leu	His	Val	His	Cys	Arg	Gly	Leu	Glu	Thr	Ser	180	185		190
Leu	Ala	Glu	Cys	Thr	Phe	Thr	Lys	Arg	Arg	Thr	Met	Gly	Tyr	Gln	Asp	195	200		205
Phe	Ala	Asp	Val	Val	Cys	Tyr	Thr	Gln	Lys	Ala	Asp	Ser	Pro	Met	Asp	210	215		220
Asp	Phe	Phe	Gln	Cys	Val	Asn	Gly	Lys	Tyr	Ile	Ser	Gln	Met	Lys	Ala	225	230		235
Cys	Asp	Gly	Ile	Asn	Asp	Cys	Gly	Asp	Gln	Ser	Asp	Glu	Leu	Cys	Cys	245	250		255
Lys	Ala	Cys	Gln	Gly	Lys	Gly	Phe	His	Cys	Lys	Ser	Gly	Val	Cys	Ile	260	265		270
Pro	Ser	Gln	Tyr	Gln	Cys	Asn	Gly	Glu	Val	Asp	Cys	Ile	Thr	Gly	Glu	275	280		285
Asp	Glu	Val	Gly	Cys	Ala	Glu	Glu	Thr	Glu	Ile	Leu	Thr	Ala	Asp	Met	290	295		300
Asp	Ala	Glu	Arg	Arg	Arg	Ile	Lys	Ser	Leu	Leu	Pro	Lys	Leu	Ser	Cys	305	310		315
Gly	Val	Lys	Asn	Arg	Met	His	Ile	Arg	Arg	Lys	Arg	Ile	Val	Gly	Gly	325	330		335
Lys	Arg	Ala	Gln	Leu	Gly	Asp	Leu	Pro	Trp	Gln	Val	Ala	Ile	Lys	Asp	340	345		350
Ala	Ser	Gly	Ile	Thr	Cys	Gly	Gly	Ile	Tyr	Ile	Gly	Gly	Cys	Trp	Ile	355	360		365
Leu	Thr	Ala	Ala	His	Cys	Leu	Arg	Ala	Ser	Lys	Thr	His	Arg	Tyr	Gln	370	375		380
Ile	Trp	Thr	Thr	Val	Val	Asp	Trp	Ile	His	Pro	Asp	Leu	Lys	Arg	Ile	385	390		395
Val	Ile	Glu	Tyr	Val	Asp	Arg	Ile	Ile	Phe	His	Glu	Asn	Tyr	Asn	Ala	405	410		415
Gly	Thr	Tyr	Gln	Asn	Asp	Ile	Ala	Leu	Ile	Glu	Met	Lys	Lys	Asp	Gly	420	425		430
Asn	Lys	Lys	Asp	Cys	Glu	Leu	Pro	Arg	Ser	Ile	Pro	Ala	Cys	Val	Pro	435	440		445
Trp	Ser	Pro	Tyr	Leu	Phe	Gln	Pro	Asn	Asp	Thr	Cys	Ile	Val	Ser	Gly	450	455		460
Trp	Gly	Arg	Glu	Lys	Asp	Asn	Glu	Arg	Val	Phe	Ser	Leu	Gln	Trp	Gly	465	470		475

130	135	140	
agc tct acg caa ctt gga aat gca gag tcc aaa acg cct gaa gcc agg			480
Ser Ser Thr Gln Leu Gly Asn Ala Glu Ser Lys Thr Pro Glu Ala Arg			
145	150	155	160
gcc tgg agc ctc tgc tgg agc agg ctg gca tcc caa ggg gaa tgt ccc			528
Ala Trp Ser Leu Cys Trp Ser Arg Leu Ala Ser Gln Gly Glu Cys Pro			
	165	170	175
caa ggg gac atg cag gca gac acc ctc agg agc aca gtg acc caa ggt			576
Gln Gly Asp Met Gln Ala Asp Thr Leu Arg Ser Thr Val Thr Gln Gly			
	180	185	190
acc cca gac ggt cag cca cag cct acc cag cct ctc ccc act gtg acg			624
Thr Pro Asp Gly Gln Pro Gln Pro Thr Gln Pro Leu Pro Thr Val Thr			
	195	200	205
cca cgg cgg cca ggc cgg cct gac cac cgg ccg ccc cgg cct ccc cag			672
Pro Arg Arg Pro Gly Arg Pro Asp His Arg Pro Pro Arg Pro Pro Gln			
	210	215	220
cca cca ccc cca ggt ggg aag cca gag cgg ccc cca aag ccg ggc ccc			720
Pro Pro Pro Pro Gly Gly Lys Pro Glu Arg Pro Pro Lys Pro Gly Pro			
	225	230	235
cca gtc cag ccc cga gcc aca gag cgg ccc gac cag tat ggc ccc aac			768
Pro Val Gln Pro Arg Ala Thr Glu Arg Pro Asp Gln Tyr Gly Pro Asn			
	245	250	255
atc tgc gac ggg gac ttt gac aca gtg gcc atg ctt cgc ggg gag atg			816
Ile Cys Asp Gly Asp Phe Asp Thr Val Ala Met Leu Arg Gly Glu Met			
	260	265	270
ttc gtg ttc aag ggc cgc tgg ttc tgg cga gtc cgg cac aac cgc gtc			864
Phe Val Phe Lys Gly Arg Trp Phe Trp Arg Val Arg His Asn Arg Val			
	275	280	285
ctg gac aac tat ccc atg ccc atc ggg cac ttc tgg cgt ggt ctg ccc			912
Leu Asp Asn Tyr Pro Met Pro Ile Gly His Phe Trp Arg Gly Leu Pro			
	290	295	300
ggg gac atc agt gct gcc tac gag cgc caa gac ggt cgt ttt gtc ttt			960
Gly Asp Ile Ser Ala Ala Tyr Glu Arg Gln Asp Gly Arg Phe Val Phe			
	305	310	315
ttc aaa ggt gac cgc tac tgg ctc ttt cga gaa gcg aac ctg gag ccc			1008
Phe Lys Gly Asp Arg Tyr Trp Leu Phe Arg Glu Ala Asn Leu Glu Pro			
	325	330	335
ggc tac cca cag ccg ctg acc agc tat ggc ctg ggc atc ccc tat gac			1056
Gly Tyr Pro Gln Pro Leu Thr Ser Tyr Gly Leu Gly Ile Pro Tyr Asp			
	340	345	350
cgc att gac acg gcc atc tgg tgg gag ccc aca ggc cac acc ttc ttc			1104
Arg Ile Asp Thr Ala Ile Trp Trp Glu Pro Thr Gly His Thr Phe Phe			
	355	360	365
ttc caa gag gac agg tac tgg cgc ttc aac gag gag aca cag cgt gga			1152
Phe Gln Glu Asp Arg Tyr Trp Arg Phe Asn Glu Thr Gln Arg Gly			
	370	375	380
gac cct ggg tac ccc aag ccc atc agt gtc tgg cag ggg atc cct gcc			1200
	127		

Asp	Pro	Gly	Tyr	Pro	Lys	Pro	Ile	Ser	Val	Trp	Gln	Gly	Ile	Pro	Ala	
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Ser	Pro	Lys	Gly	Ala	Phe	Leu	Ser	Asn	Asp	Ala	Ala	Tyr	Thr	Tyr	Phe	
				405					410					415		
tac	aag	ggc	acc	aaa	tac	tgg	aaa	ttc	gac	aat	gag	cgc	ctg	cgg	atg	1296
Tyr	Lys	Gly	Thr	Lys	Tyr	Trp	Lys	Phe	Asp	Asn	Glu	Arg	Leu	Arg	Met	
				420				425					430			
gag	ccc	ggc	tac	ccc	aag	tcc	atc	ctg	cgg	gac	ttc	atg	ggc	tgc	cag	1344
Glu	Pro	Gly	Tyr	Pro	Lys	Ser	Ile	Leu	Arg	Asp	Phe	Met	Gly	Cys	Gln	
		435					440					445				
gag	cac	gtg	gag	cca	ggc	ccc	cga	tgg	ccc	gac	gtg	gcc	cgg	ccg	ccc	1392
Glu	His	Val	Glu	Pro	Gly	Pro	Arg	Trp	Pro	Asp	Val	Ala	Arg	Pro	Pro	
	450					455				460						
ttc	aac	ccc	cac	ggg	ggt	gca	gag	ccc	ggg	gcg	gac	agc	gca	gag	ggc	1440
Phe	Asn	Pro	His	Gly	Gly	Ala	Glu	Pro	Gly	Ala	Asp	Ser	Ala	Glu	Gly	
465				470					475					480		
gac	gtg	ggg	gat	ggg	gat	ggg	gac	ttt	ggg	gcc	ggg	gtc	aac	aag	gac	1488
Asp	Val	Gly	Asp	Gly	Asp	Gly	Asp	Phe	Gly	Ala	Gly	Val	Asn	Lys	Asp	
				485				490					495			
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Gly	Gly	Ser	Arg	Val	Val	Val	Gln	Met	Glu	Glu	Val	Ala	Arg	Thr	Val	
			500					505					510			
aac	gtg	gtg	atg	gtg	ctg	gtg	cca	ctg	ctg	ctg	ctg	ctc	tgc	gtc	ctg	1584
Asn	Val	Val	Met	Val	Leu	Val	Pro	Leu	Leu	Leu	Leu	Leu	Cys	Val	Leu	
			515				520					525				
ggc	ctc	acc	tac	gcg	ctg	gtg	cag	atg	cag	cgc	aag	ggt	gcg	cca	cgt	1632
Gly	Leu	Thr	Tyr	Ala	Leu	Val	Gln	Met	Gln	Arg	Lys	Gly	Ala	Pro	Arg	
	530					535					540					
gtc	ctg	ctt	tac	tgc	aag	cgc	tcg	ctg	cag	gag	tgg	gtc	tga			1674
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Lys	Trp	Asn	Asn	His	His	Leu	Thr	Phe	Ser	Ile	Gln	Asn	Tyr	Thr	Glu	
		35					40					45				
Lys	Leu	Gly	Trp	Tyr	His	Ser	Met	Glu	Ala	Val	Arg	Arg	Ala	Phe	Arg	
	50					55				60						
Val	Trp	Glu	Gln	Ala	Thr	Pro	Leu	Val	Phe	Gln	Glu	Val	Pro	Tyr	Glu	
65					70					75					80	

Asp	Ile	Arg	Leu	Arg	Arg	Gln	Lys	Glu	Ala	Asp	Ile	Met	Glu	Thr	Thr	85	90	95
Ser	Ser	Trp	Trp	Gln	Cys	Met	Ser	Trp	Ala	Thr	Arg	Trp	Gly	Trp	Ser	100	105	110
Thr	Pro	Ala	Thr	Pro	Met	Pro	Ser	Trp	Arg	Arg	Ser	Thr	Ser	Gly	Arg	115	120	125
Thr	Leu	Thr	Thr	Ser	Ser	Cys	Pro	Arg	Thr	Ile	Ser	Val	Ala	Ser	Ser	130	135	140
Ser	Ser	Thr	Gln	Leu	Gly	Asn	Ala	Glu	Ser	Lys	Thr	Pro	Glu	Ala	Arg	145	150	155
Ala	Trp	Ser	Leu	Cys	Trp	Ser	Arg	Leu	Ala	Ser	Gln	Gly	Glu	Cys	Pro	165	170	175
Gln	Gly	Asp	Met	Gln	Ala	Asp	Thr	Leu	Arg	Ser	Thr	Val	Thr	Gln	Gly	180	185	190
Thr	Pro	Asp	Gly	Gln	Pro	Gln	Pro	Thr	Gln	Pro	Leu	Pro	Thr	Val	Thr	195	200	205
Pro	Arg	Arg	Pro	Gly	Arg	Pro	Asp	His	Arg	Pro	Pro	Arg	Pro	Pro	Gln	210	215	220
Pro	Pro	Pro	Pro	Gly	Gly	Lys	Pro	Glu	Arg	Pro	Pro	Lys	Pro	Gly	Pro	225	230	235
Pro	Val	Gln	Pro	Arg	Ala	Thr	Glu	Arg	Pro	Asp	Gln	Tyr	Gly	Pro	Asn	245	250	255
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Phe	Val	Phe	Lys	Gly	Arg	Trp	Phe	Trp	Arg	Val	Arg	His	Asn	Arg	Val	275	280	285
Leu	Asp	Asn	Tyr	Pro	Met	Pro	Ile	Gly	His	Phe	Trp	Arg	Gly	Leu	Pro	290	295	300
Gly	Asp	Ile	Ser	Ala	Ala	Tyr	Glu	Arg	Gln	Asp	Gly	Arg	Phe	Val	Phe	305	310	315
Phe	Lys	Gly	Asp	Arg	Tyr	Trp	Leu	Phe	Arg	Glu	Ala	Asn	Leu	Glu	Pro	325	330	335
Gly	Tyr	Pro	Gln	Pro	Leu	Thr	Ser	Tyr	Gly	Leu	Gly	Ile	Pro	Tyr	Asp	340	345	350
Arg	Ile	Asp	Thr	Ala	Ile	Trp	Trp	Glu	Pro	Thr	Gly	His	Thr	Phe	Phe	355	360	365
Phe	Gln	Glu	Asp	Arg	Tyr	Trp	Arg	Phe	Asn	Glu	Glu	Thr	Gln	Arg	Gly	370	375	380
Asp	Pro	Gly	Tyr	Pro	Lys	Pro	Ile	Ser	Val	Trp	Gln	Gly	Ile	Pro	Ala	385	390	395
Ser	Pro	Lys	Gly	Ala	Phe	Leu	Ser	Asn	Asp	Ala	Ala	Tyr	Thr	Tyr	Phe	405	410	415
																	129	

Tyr Lys Gly Thr Lys Tyr Trp Lys Phe Asp Asn Glu Arg Leu Arg Met
 420 425 430
 Glu Pro Gly Tyr Pro Lys Ser Ile Leu Arg Asp Phe Met Gly Cys Gln
 435 440 445
 Glu His Val Glu Pro Gly Pro Arg Trp Pro Asp Val Ala Arg Pro Pro
 450 455 460
 Phe Asn Pro His Gly Gly Ala Glu Pro Gly Ala Asp Ser Ala Glu Gly
 465 470 475 480
 Asp Val Gly Asp Gly Asp Gly Asp Phe Gly Ala Gly Val Asn Lys Asp
 485 490 495
 Gly Gly Ser Arg Val Val Val Gln Met Glu Glu Val Ala Arg Thr Val
 500 505 510
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 Ala Gly Ala Ser Cys Gly Pro Gln Arg Gly Pro Ala Gly Ser Val Pro
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gcc agc gcc ccg gcc cgc acg ccg ccc tgc cgc ctg ctt ctc gtc ctt 202
 Ala Ser Ala Pro Ala Arg Thr Pro Pro Cys Arg Leu Leu Leu Val Leu
 35 40 45 50

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 Leu Leu Leu Pro Pro Leu Ala Ala Ser Ser Arg Pro Arg Ala Trp Gly
 55 60 65

gct gct gcg ccc agc gct ccg cat tgg aat gaa act gca gaa aaa aat 298
 Ala Ala Ala Pro Ser Ala Pro His Trp Asn Glu Thr Ala Glu Lys Asn
 70 75 80

ttg gga gtc ctg gca gat gaa gac aat aca ttg caa cag aat agc agc 346
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Leu	Gly	Val	Leu	Ala	Asp	Glu	Asp	Asn	Thr	Leu	Gln	Gln	Asn	Ser	Ser		
		85					90					95					
agt	aat	atc	agt	tac	agc	aat	gca	atg	cag	aaa	gaa	atc	aca	ctg	cct	394	
Ser	Asn	Ile	Ser	Tyr	Ser	Asn	Ala	Met	Gln	Lys	Glu	Ile	Thr	Leu	Pro		
	100					105					110						
tca	aga	ctc	ata	tat	tac	atc	aac	caa	gac	tcg	gaa	agc	cct	tat	cac	442	
Ser	Arg	Leu	Ile	Tyr	Tyr	Ile	Asn	Gln	Asp	Ser	Glu	Ser	Pro	Tyr	His		
	115				120					125					130		
gtt	ctt	gac	aca	aag	gca	aga	cac	cag	caa	aaa	cat	aat	aag	gct	gtc	490	
Val	Leu	Asp	Thr	Lys	Ala	Arg	His	Gln	Gln	Lys	His	Asn	Lys	Ala	Val		
				135					140					145			
cat	ctg	gcc	cag	gca	agc	ttc	cag	att	gaa	gcc	ttc	ggc	tcc	aaa	ttc	538	
His	Leu	Ala	Gln	Ala	Ser	Phe	Gln	Ile	Glu	Ala	Phe	Gly	Ser	Lys	Phe		
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att	ctt	gac	ctc	ata	ctg	aac	aat	ggg	ttg	ttg	tct	tct	gat	tat	gtg	586	
Ile	Leu	Asp	Leu	Ile	Leu	Asn	Asn	Gly	Leu	Leu	Ser	Ser	Asp	Tyr	Val		
		165					170					175					
gag	att	cac	tac	gaa	aat	ggg	aaa	cca	cag	tac	tct	aag	ggg	gga	gag	634	
Glu	Ile	His	Tyr	Glu	Asn	Gly	Lys	Pro	Gln	Tyr	Ser	Lys	Gly	Gly	Glu		
	180					185					190						
cac	tgt	tac	tac	cat	gga	agc	atc	aga	ggc	gtc	aaa	gac	tcc	aag	gtg	682	
His	Cys	Tyr	Tyr	His	Gly	Ser	Ile	Arg	Gly	Val	Lys	Asp	Ser	Lys	Val		
	195				200					205					210		
gct	ctg	tca	acc	tgc	aat	gga	ctt	cat	ggc	atg	ttt	gaa	gat	gat	acc	730	
Ala	Leu	Ser	Thr	Cys	Asn	Gly	Leu	His	Gly	Met	Phe	Glu	Asp	Asp	Thr		
				215					220					225			
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Phe	Val	Tyr	Met	Ile	Glu	Pro	Leu	Glu	Leu	Val	His	Asp	Glu	Lys	Ser		
			230					235					240				
aca	ggg	cga	cca	cat	ata	atc	cag	aaa	acc	ttg	gca	gga	cag	tat	tct	826	
Thr	Gly	Arg	Pro	His	Ile	Ile	Gln	Lys	Thr	Leu	Ala	Gly	Gln	Tyr	Ser		
		245					250					255					
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Lys	Gln	Met	Lys	Asn	Leu	Thr	Met	Glu	Arg	Gly	Asp	Gln	Trp	Pro	Phe		
	260					265					270						
ctc	tct	gaa	tta	cag	tggt	ttg	aaa	aga	agg	aag	aga	gca	gtg	aat	cca	922	
Leu	Ser	Glu	Leu	Gln	Trp	Leu	Lys	Arg	Arg	Lys	Arg	Ala	Val	Asn	Pro		
	275				280					285					290		
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Asn	Asp	His	Lys	Thr	Tyr	Lys	Lys	His	Arg	Ser	Ser	His	Ala	His	Thr		
			310					315					320				
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Asn	Asn	Phe	Ala	Lys	Ser	Val	Val	Asn	Leu	Val	Asp	Ser	Ile	Tyr	Lys		
		325					330					335					

gag	cag	ctc	aac	acc	agg	gtt	gtc	ctg	gtg	gct	gta	gag	acc	tgg	act	1114
Glu	Gln	Leu	Asn	Thr	Arg	Val	Val	Leu	Val	Ala	Val	Glu	Thr	Trp	Thr	
	340					345				350						
gag	aag	gat	cag	att	gac	atc	acc	acc	aac	cct	gtg	cag	atg	ctc	cat	1162
Glu	Lys	Asp	Gln	Ile	Asp	Ile	Thr	Thr	Asn	Pro	Val	Gln	Met	Leu	His	
355					360				365					370		
gag	ttc	tca	aaa	tac	cgg	cag	cgc	att	aag	cag	cat	gct	gat	gct	gtg	1210
Glu	Phe	Ser	Lys	Tyr	Arg	Gln	Arg	Ile	Lys	Gln	His	Ala	Asp	Ala	Val	
				375					380					385		
cac	ctc	atc	tcg	cgg	gtg	aca	ttt	cac	tat	aag	aga	agc	agt	ctg	agt	1258
His	Leu	Ile	Ser	Arg	Val	Thr	Phe	His	Tyr	Lys	Arg	Ser	Ser	Leu	Ser	
			390					395					400			
tac	ttt	gga	ggt	gtc	tgt	tct	cgc	aca	aga	gga	gtt	ggt	gtg	aat	gag	1306
Tyr	Phe	Gly	Gly	Val	Cys	Ser	Arg	Thr	Arg	Gly	Val	Gly	Val	Asn	Glu	
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Tyr	Gly	Leu	Pro	Met	Ala	Val	Ala	Gln	Val	Leu	Ser	Gln	Ser	Leu	Ala	
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caa	aac	ctt	gga	atc	caa	tgg	gaa	cct	tct	agc	aga	aag	cca	aaa	tgt	1402
Gln	Asn	Leu	Gly	Ile	Gln	Trp	Glu	Pro	Ser	Ser	Arg	Lys	Pro	Lys	Cys	
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gac	tgc	aca	gaa	tcc	tgg	ggt	ggc	tgc	atc	atg	gag	gaa	aca	ggg	gtg	1450
Asp	Cys	Thr	Glu	Ser	Trp	Gly	Gly	Cys	Ile	Met	Glu	Glu	Thr	Gly	Val	
				455				460						465		
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Ser	His	Ser	Arg	Lys	Phe	Ser	Lys	Cys	Ser	Ile	Leu	Glu	Tyr	Arg	Asp	
			470					475					480			
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Phe	Leu	Gln	Arg	Gly	Gly	Gly	Ala	Cys	Leu	Phe	Asn	Arg	Pro	Thr	Lys	
	485						490					495				
cta	ttt	gag	ccc	acg	gaa	tgt	gga	aat	gga	tac	gtg	gaa	gct	ggg	gag	1594
Leu	Phe	Glu	Pro	Thr	Glu	Cys	Gly	Asn	Gly	Tyr	Val	Glu	Ala	Gly	Glu	
	500					505					510					
gag	tgt	gat	tgt	ggt	ttt	cat	gtg	gaa	tgc	tat	gga	tta	tgc	tgt	aag	1642
Glu	Cys	Asp	Cys	Gly	Phe	His	Val	Glu	Cys	Tyr	Gly	Leu	Cys	Cys	Lys	
515					520				525						530	
aaa	tgt	tcc	ctc	tcc	aac	ggg	gct	cac	tgc	agc	gac	ggg	ccc	tgc	tgt	1690
Lys	Cys	Ser	Leu	Ser	Asn	Gly	Ala	His	Cys	Ser	Asp	Gly	Pro	Cys	Cys	
				535					540					545		
aac	aat	acc	tca	tgt	ctt	ttt	cag	cca	cga	ggg	tat	gaa	tgc	cgg	gat	1738
Asn	Asn	Thr	Ser	Cys	Leu	Phe	Gln	Pro	Arg	Gly	Tyr	Glu	Cys	Arg	Asp	
			550					555					560			
gct	gtg	aac	gag	tgt	gat	att	act	gaa	tat	tgt	act	gga	gac	tct	ggt	1786
Ala	Val	Asn	Glu	Cys	Asp	Ile	Thr	Glu	Tyr	Cys	Thr	Gly	Asp	Ser	Gly	
		565					570					575				
cag	tgc	cca	cca	aat	ctt	cat	aag	caa	gac	gga	tat	gca	tgc	aat	caa	1834
Gln	Cys	Pro	Pro	Asn	Leu	His	Lys	Gln	Asp	Gly	Tyr	Ala	Cys	Asn	Gln	
	580					585					590					

aat cag ggc cgc tgc tac aat ggc gag tgc aag acc aga gac aac cag	1882
Asn Gln Gly Arg Cys Tyr Asn Gly Glu Cys Lys Thr Arg Asp Asn Gln	
595 600 605 610	
tgt cag tac atc tgg gga aca aag gct gca ggg tct gac aag ttc tgc	1930
Cys Gln Tyr Ile Trp Gly Thr Lys Ala Ala Gly Ser Asp Lys Phe Cys	
615 620 625	
tat gaa aag ctg aat aca gaa ggc act gag aag gga aac tgc ggg aag	1978
Tyr Glu Lys Leu Asn Thr Glu Gly Thr Glu Lys Gly Asn Cys Gly Lys	
630 635 640	
gat gga gac cgg tgg att cag tgc agc aaa cat gat gtg ttc tgt gga	2026
Asp Gly Asp Arg Trp Ile Gln Cys Ser Lys His Asp Val Phe Cys Gly	
645 650 655	
ttc tta ctc tgt acc aat ctt act cga gct cca cgt att ggt caa ctt	2074
Phe Leu Leu Cys Thr Asn Leu Thr Arg Ala Pro Arg Ile Gly Gln Leu	
660 665 670	
cag ggt gag atc att cca act tcc ttc tac cat caa ggc cgg gtg att	2122
Gln Gly Glu Ile Ile Pro Thr Ser Phe Tyr His Gln Gly Arg Val Ile	
675 680 685 690	
gac tgc agt ggt gcc cat gta gtt tta gat gat gat acg gat gtg ggc	2170
Asp Cys Ser Gly Ala His Val Val Leu Asp Asp Asp Thr Asp Val Gly	
695 700 705	
tat gta gaa gat gga acg cca tgt ggc ccg tct atg atg tgt tta gat	2218
Tyr Val Glu Asp Gly Thr Pro Cys Gly Pro Ser Met Met Cys Leu Asp	
710 715 720	
cgg aag tgc cta caa att caa gcc cta aat atg agc agc tgt cca ctc	2266
Arg Lys Cys Leu Gln Ile Gln Ala Leu Asn Met Ser Ser Cys Pro Leu	
725 730 735	
gat tcc aag ggt aaa gtc tgt tgc ggc cat ggg gtg tgt agt aat gaa	2314
Asp Ser Lys Gly Lys Val Cys Ser Gly His Gly Val Cys Ser Asn Glu	
740 745 750	
gcc acc tgc att tgt gat ttc acc tgg gca ggg aca gat tgc agt atc	2362
Ala Thr Cys Ile Cys Asp Phe Thr Trp Ala Gly Thr Asp Cys Ser Ile	
755 760 765 770	
cgg gat cca gtt agg aac ctt cac ccc ccc aag gat gaa gga ccc aag	2410
Arg Asp Pro Val Arg Asn Leu His Pro Pro Lys Asp Glu Gly Pro Lys	
775 780 785	
gtg aat atg gcc aca agc agg cta ata ggg gcc gtg gcc ggc acc att	2458
Val Asn Met Ala Thr Ser Arg Leu Ile Gly Ala Val Ala Gly Thr Ile	
790 795 800	
ctg gcc ctg ggg gtg att ttt gga ggc aca ggg tgg gga ata gaa aat	2506
Leu Ala Leu Gly Val Ile Phe Gly Gly Thr Gly Trp Gly Ile Glu Asn	
805 810 815	
gtc aag aag aga agg ttc gat cct act cag caa ggc ccc atc	2548
Val Lys Lys Arg Arg Phe Asp Pro Thr Gln Gln Gly Pro Ile	
820 825 830	
tgaatcagct gcgctggatg gacaccgcct tgcactgttg gattctgggt atgacatact	2608

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 cggagctaaa gttgggggtga caaggatggg gtaaaagaaa actgtctctt ttggaaataa 2728
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 gatgacaaac tccagtggca tgaagatcta attttcaaaa gggtaaaaac tgcatggcat 3028
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<210> 46

<211> 832

<212> PRT

<213> Homo sapiens

<400> 46

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Ser	Leu	Ala	Gly	Ala	Ser	Cys	Gly	Pro	Gln	Arg	Gly	Pro	Ala	Gly	Ser
			20					25					30		
Val	Pro	Ala	Ser	Ala	Pro	Ala	Arg	Thr	Pro	Pro	Cys	Arg	Leu	Leu	Leu
		35					40					45			
Val	Leu	Leu	Leu	Leu	Pro	Pro	Leu	Ala	Ala	Ser	Ser	Arg	Pro	Arg	Ala
	50					55					60				
Trp	Gly	Ala	Ala	Ala	Pro	Ser	Ala	Pro	His	Trp	Asn	Glu	Thr	Ala	Glu
65					70					75					80
Lys	Asn	Leu	Gly	Val	Leu	Ala	Asp	Glu	Asp	Asn	Thr	Leu	Gln	Gln	Asn
				85					90					95	
Ser	Ser	Ser	Asn	Ile	Ser	Tyr	Ser	Asn	Ala	Met	Gln	Lys	Glu	Ile	Thr
			100					105					110		
Leu	Pro	Ser	Arg	Leu	Ile	Tyr	Tyr	Ile	Asn	Gln	Asp	Ser	Glu	Ser	Pro
		115					120					125			
Tyr	His	Val	Leu	Asp	Thr	Lys	Ala	Arg	His	Gln	Gln	Lys	His	Asn	Lys
	130					135					140				
Ala	Val	His	Leu	Ala	Gln	Ala	Ser	Phe	Gln	Ile	Glu	Ala	Phe	Gly	Ser
145				150						155					160
Lys	Phe	Ile	Leu	Asp	Leu	Ile	Leu	Asn	Asn	Gly	Leu	Leu	Ser	Ser	Asp
			165					170					175		
Tyr	Val	Glu	Ile	His	Tyr	Glu	Asn	Gly	Lys	Pro	Gln	Tyr	Ser	Lys	Gly
		180					185						190		
Gly	Glu	His	Cys	Tyr	Tyr	His	Gly	Ser	Ile	Arg	Gly	Val	Lys	Asp	Ser
	195						200					205			
Lys	Val	Ala	Leu	Ser	Thr	Cys	Asn	Gly	Leu	His	Gly	Met	Phe	Glu	Asp
	210					215					220				

Asp Thr Phe Val Tyr Met Ile Glu Pro Leu Glu Leu Val His Asp Glu
 225 230 235 240
 Lys Ser Thr Gly Arg Pro His Ile Ile Gln Lys Thr Leu Ala Gly Gln
 245 250 255
 Tyr Ser Lys Gln Met Lys Asn Leu Thr Met Glu Arg Gly Asp Gln Trp
 260 265 270
 Pro Phe Leu Ser Glu Leu Gln Trp Leu Lys Arg Arg Lys Arg Ala Val
 275 280 285
 Asn Pro Ser Arg Gly Ile Phe Glu Glu Met Lys Tyr Leu Glu Leu Met
 290 295 300
 Ile Val Asn Asp His Lys Thr Tyr Lys Lys His Arg Ser Ser His Ala
 305 310 315 320
 His Thr Asn Asn Phe Ala Lys Ser Val Val Asn Leu Val Asp Ser Ile
 325 330 335
 Tyr Lys Glu Gln Leu Asn Thr Arg Val Val Leu Val Ala Val Glu Thr
 340 345 350
 Trp Thr Glu Lys Asp Gln Ile Asp Ile Thr Thr Asn Pro Val Gln Met
 355 360 365
 Leu His Glu Phe Ser Lys Tyr Arg Gln Arg Ile Lys Gln His Ala Asp
 370 375 380
 Ala Val His Leu Ile Ser Arg Val Thr Phe His Tyr Lys Arg Ser Ser
 385 390 395 400
 Leu Ser Tyr Phe Gly Gly Val Cys Ser Arg Thr Arg Gly Val Gly Val
 405 410 415
 Asn Glu Tyr Gly Leu Pro Met Ala Val Ala Gln Val Leu Ser Gln Ser
 420 425 430
 Leu Ala Gln Asn Leu Gly Ile Gln Trp Glu Pro Ser Ser Arg Lys Pro
 435 440 445
 Lys Cys Asp Cys Thr Glu Ser Trp Gly Gly Cys Ile Met Glu Glu Thr
 450 455 460
 Gly Val Ser His Ser Arg Lys Phe Ser Lys Cys Ser Ile Leu Glu Tyr
 465 470 475 480
 Arg Asp Phe Leu Gln Arg Gly Gly Gly Ala Cys Leu Phe Asn Arg Pro
 485 490 495
 Thr Lys Leu Phe Glu Pro Thr Glu Cys Gly Asn Gly Tyr Val Glu Ala
 500 505 510
 Gly Glu Glu Cys Asp Cys Gly Phe His Val Glu Cys Tyr Gly Leu Cys
 515 520 525
 Cys Lys Lys Cys Ser Leu Ser Asn Gly Ala His Cys Ser Asp Gly Pro
 530 535 540
 Cys Cys Asn Asn Thr Ser Cys Leu Phe Gln Pro Arg Gly Tyr Glu Cys
 545 550 555 560

Arg Asp Ala Val Asn Glu Cys Asp Ile Thr Glu Tyr Cys Thr Gly Asp
 565 570 575
 Ser Gly Gln Cys Pro Pro Asn Leu His Lys Gln Asp Gly Tyr Ala Cys
 580 585 590
 Asn Gln Asn Gln Gly Arg Cys Tyr Asn Gly Glu Cys Lys Thr Arg Asp
 595 600 605
 Asn Gln Cys Gln Tyr Ile Trp Gly Thr Lys Ala Ala Gly Ser Asp Lys
 610 615 620
 Phe Cys Tyr Glu Lys Leu Asn Thr Glu Gly Thr Glu Lys Gly Asn Cys
 625 630 635 640
 Gly Lys Asp Gly Asp Arg Trp Ile Gln Cys Ser Lys His Asp Val Phe
 645 650 655
 Cys Gly Phe Leu Leu Cys Thr Asn Leu Thr Arg Ala Pro Arg Ile Gly
 660 665 670
 Gln Leu Gln Gly Glu Ile Ile Pro Thr Ser Phe Tyr His Gln Gly Arg
 675 680 685
 Val Ile Asp Cys Ser Gly Ala His Val Val Leu Asp Asp Asp Thr Asp
 690 695 700
 Val Gly Tyr Val Glu Asp Gly Thr Pro Cys Gly Pro Ser Met Met Cys
 705 710 715 720
 Leu Asp Arg Lys Cys Leu Gln Ile Gln Ala Leu Asn Met Ser Ser Cys
 725 730 735
 Pro Leu Asp Ser Lys Gly Lys Val Cys Ser Gly His Gly Val Cys Ser
 740 745 750
 Asn Glu Ala Thr Cys Ile Cys Asp Phe Thr Trp Ala Gly Thr Asp Cys
 755 760 765
 Ser Ile Arg Asp Pro Val Arg Asn Leu His Pro Pro Lys Asp Glu Gly
 770 775 780
 Pro Lys Val Asn Met Ala Thr Ser Arg Leu Ile Gly Ala Val Ala Gly
 785 790 795 800
 Thr Ile Leu Ala Leu Gly Val Ile Phe Gly Gly Thr Gly Trp Gly Ile
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 Glu Asn Val Lys Lys Arg Arg Phe Asp Pro Thr Gln Gln Gly Pro Ile
 820 825 830

<210> 47

<211> 1848

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(1845)

<400> 47

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1				5					10					15			
ggg	atc	cta	ggg	ggg	tcc	gtg	act	ctc	ccc	cta	aac	atc	tca	gta	gac	96	
Gly	Ile	Leu	Gly	Gly	Ser	Val	Thr	Leu	Pro	Leu	Asn	Ile	Ser	Val	Asp		
			20					25					30				
aca	gag	att	gag	aac	gtc	atc	tgg	att	ggg	ccc	aaa	aat	gct	ctt	gct	144	
Thr	Glu	Ile	Glu	Asn	Val	Ile	Trp	Ile	Gly	Pro	Lys	Asn	Ala	Leu	Ala		
			35				40					45					
ttc	gca	cgt	ccc	aaa	gaa	aat	gta	acc	att	atg	gtc	aaa	agc	tac	ctg	192	
Phe	Ala	Arg	Pro	Lys	Glu	Asn	Val	Thr	Ile	Met	Val	Lys	Ser	Tyr	Leu		
	50					55				60							
ggc	cga	cta	gac	atc	acc	aag	tgg	agt	tac	tcc	ctg	tgc	atc	agc	aat	240	
Gly	Arg	Leu	Asp	Ile	Thr	Lys	Trp	Ser	Tyr	Ser	Leu	Cys	Ile	Ser	Asn		
	65				70				75					80			
ctg	act	ctg	aat	gat	gca	gga	tcc	tac	aaa	gcc	cag	ata	aac	caa	agg	288	
Leu	Thr	Leu	Asn	Asp	Ala	Gly	Ser	Tyr	Lys	Ala	Gln	Ile	Asn	Gln	Arg		
				85				90						95			
aat	ttt	gaa	gtc	acc	act	gag	gag	gaa	ttc	acc	ctg	ttc	gtc	tat	gag	336	
Asn	Phe	Glu	Val	Thr	Thr	Glu	Glu	Glu	Phe	Thr	Leu	Phe	Val	Tyr	Glu		
			100					105					110				
cag	ctg	cag	gag	ccc	caa	gtc	acc	atg	aag	tct	gtg	aag	gtg	tct	gag	384	
Gln	Leu	Gln	Glu	Pro	Gln	Val	Thr	Met	Lys	Ser	Val	Lys	Val	Ser	Glu		
		115					120					125					
aac	ttc	tcc	tgt	aac	atc	act	cta	atg	tgc	tcc	gtg	aag	ggg	gca	gag	432	
Asn	Phe	Ser	Cys	Asn	Ile	Thr	Leu	Met	Cys	Ser	Val	Lys	Gly	Ala	Glu		
	130					135					140						
aaa	agt	gtt	ctg	tac	agc	tgg	acc	cca	agg	gaa	ccc	cat	gct	tct	gag	480	
Lys	Ser	Val	Leu	Tyr	Ser	Trp	Thr	Pro	Arg	Glu	Pro	His	Ala	Ser	Glu		
	145				150					155					160		
tcc	aat	gga	ggc	tcc	att	ctt	acc	gtc	tcc	cga	aca	cca	tgt	gac	cca	528	
Ser	Asn	Gly	Gly	Ser	Ile	Leu	Thr	Val	Ser	Arg	Thr	Pro	Cys	Asp	Pro		
				165					170					175			
gac	ctg	cca	tac	atc	tgc	aca	gcc	cag	aac	ccc	gtc	agc	cag	aga	agc	576	
Asp	Leu	Pro	Tyr	Ile	Cys	Thr	Ala	Gln	Asn	Pro	Val	Ser	Gln	Arg	Ser		
			180					185					190				
tcc	ctc	cct	gtc	cat	gtt	ggg	cag	ttc	tgt	aca	gat	cca	gga	gcc	tcc	624	
Ser	Leu	Pro	Val	His	Val	Gly	Gln	Phe	Cys	Thr	Asp	Pro	Gly	Ala	Ser		
		195				200						205					
aga	gga	gga	aca	acg	ggg	gag	act	gtg	gta	ggg	gtc	ctg	gga	gag	cca	672	
Arg	Gly	Gly	Thr	Thr	Gly	Glu	Thr	Val	Val	Gly	Val	Leu	Gly	Glu	Pro		
	210					215					220						
gtc	acc	ctg	cca	ctt	gca	ctc	cca	gcc	tgc	cgg	gac	aca	gag	aag	gtt	720	
Val	Thr	Leu	Pro	Leu	Ala	Leu	Pro	Ala	Cys	Arg	Asp	Thr	Glu	Lys	Val		
	225				230				235						240		
gtc	tgg	ttg	ttt	aac	aca	tcc	atc	att	agc	aaa	gag	agg	gaa	gaa	gca	768	
Val	Trp	Leu	Phe	Asn	Thr	Ser	Ile	Ile	Ser	Lys	Glu	Arg	Glu	Glu	Ala		
				245					250					255			

gca acg gca gat cca ctc att aaa tcc agg gat cct tac aag aac agg	816
Ala Thr Ala Asp Pro Leu Ile Lys Ser Arg Asp Pro Tyr Lys Asn Arg	
260 265 270	
gtg tgg gtc tcc agc cag gac tgc tcc ctg aag atc agc cag ctg aag	864
Val Trp Val Ser Ser Gln Asp Cys Ser Leu Lys Ile Ser Gln Leu Lys	
275 280 285	
ata gag gac gcc ggc ccc tac cat gcc tac gtg tgc tca gag gcc tcc	912
Ile Glu Asp Ala Gly Pro Tyr His Ala Tyr Val Cys Ser Glu Ala Ser	
290 295 300	
agc gtc acc agc atg aca cat gtc acc ctg ctc atc tac cgc agg ctg	960
Ser Val Thr Ser Met Thr His Val Thr Leu Leu Ile Tyr Arg Arg Leu	
305 310 315 320	
agg aag ccc aaa atc acg tgg agc ctc agg cac agt gag gat ggc atc	1008
Arg Lys Pro Lys Ile Thr Trp Ser Leu Arg His Ser Glu Asp Gly Ile	
325 330 335	
tgc agg atc agc ctg acc tgc tcc gtg gag gac ggg gga aac act gtc	1056
Cys Arg Ile Ser Leu Thr Cys Ser Val Glu Asp Gly Gly Asn Thr Val	
340 345 350	
atg tac aca tgg acc ccg ctg cag aag gaa gct gtt gtg tcc caa ggg	1104
Met Tyr Thr Trp Thr Pro Leu Gln Lys Glu Ala Val Val Ser Gln Gly	
355 360 365	
gaa tca cac ctc aat gtc tca tgg aga agc agt gaa aat cac ccc aac	1152
Glu Ser His Leu Asn Val Ser Trp Arg Ser Ser Glu Asn His Pro Asn	
370 375 380	
ctc aca tgc aca gcc agc aac cct gtc agc agg agt tcc cac cag ttt	1200
Leu Thr Cys Thr Ala Ser Asn Pro Val Ser Arg Ser Ser His Gln Phe	
385 390 395 400	
ctt tct gag aac atc tgt tca gga cct gag aga aac aca aag ctt tgg	1248
Leu Ser Glu Asn Ile Cys Ser Gly Pro Glu Arg Asn Thr Lys Leu Trp	
405 410 415	
att ggg ttg ttc ctg atg gtt tgc ctt ctg tgc gtt ggg atc ttc agc	1296
Ile Gly Leu Phe Leu Met Val Cys Leu Leu Cys Val Gly Ile Phe Ser	
420 425 430	
tgg tgc att tgg aag cga aaa gga cgg tgt tca gtc cca gcc ttc tgt	1344
Trp Cys Ile Trp Lys Arg Lys Gly Arg Cys Ser Val Pro Ala Phe Cys	
435 440 445	
tcc agc caa gct gag gcc cca gcg gat aca cca gaa ccc aca gct ggc	1392
Ser Ser Gln Ala Glu Ala Pro Ala Asp Thr Pro Glu Pro Thr Ala Gly	
450 455 460	
cac acg cta tac tct gtg ctc tcc caa gga tat gag aag ctg gac act	1440
His Thr Leu Tyr Ser Val Leu Ser Gln Gly Tyr Glu Lys Leu Asp Thr	
465 470 475 480	
ccc ctc agg cct gcc agg caa cag cct aca ccc acc tca gac ggc agc	1488
Pro Leu Arg Pro Ala Arg Gln Gln Pro Thr Pro Thr Ser Asp Gly Ser	
485 490 495	
tct gac agc aac ctc aca act gag gag gat gag gac agg cct gag gtg	1536
Ser Asp Ser Asn Leu Thr Thr Glu Glu Asp Glu Asp Arg Pro Glu Val	
500 505 510	

cac aag ccc atc agt gga aga tat gag gta ttt gac cag gtc acc cag	1584
His Lys Pro Ile Ser Gly Arg Tyr Glu Val Phe Asp Gln Val Thr Gln	
515 520 525	
 gag ggc gct gga cat gac cca gcc cct gag ggc caa gca gac tat gat	1632
Glu Gly Ala Gly His Asp Pro Ala Pro Glu Gly Gln Ala Asp Tyr Asp	
530 535 540	
 ccc gtc act cca tat gtc acg gaa gtt gag tct gtg gtt gga gag aac	1680
Pro Val Thr Pro Tyr Val Thr Glu Val Glu Ser Val Val Gly Glu Asn	
545 550 555 560	
 acc atg tat gca caa gtg ttc aac tta cag gga aag acc cca gtt tct	1728
Thr Met Tyr Ala Gln Val Phe Asn Leu Gln Gly Lys Thr Pro Val Ser	
565 570 575	
 cag aag gaa gag agc tca gcc aca atc tac tgc tcc ata cgg aaa cct	1776
Gln Lys Glu Glu Ser Ser Ala Thr Ile Tyr Cys Ser Ile Arg Lys Pro	
580 585 590	
 cag gtg gtg cca cca cca caa cag aat gat ctt gag att cct gaa agt	1824
Gln Val Val Pro Pro Pro Gln Gln Asn Asp Leu Glu Ile Pro Glu Ser	
595 600 605	
 cct acc tat gaa aat ttc acc tag	1848
Pro Thr Tyr Glu Asn Phe Thr	
610 615	
 <210> 48	
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<212> PRT	
<213> Homo sapiens	
 <400> 48	
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1 5 10 15	
Gly Ile Leu Gly Gly Ser Val Thr Leu Pro Leu Asn Ile Ser Val Asp	
20 25 30	
Thr Glu Ile Glu Asn Val Ile Trp Ile Gly Pro Lys Asn Ala Leu Ala	
35 40 45	
Phe Ala Arg Pro Lys Glu Asn Val Thr Ile Met Val Lys Ser Tyr Leu	
50 55 60	
Gly Arg Leu Asp Ile Thr Lys Trp Ser Tyr Ser Leu Cys Ile Ser Asn	
65 70 75 80	
Leu Thr Leu Asn Asp Ala Gly Ser Tyr Lys Ala Gln Ile Asn Gln Arg	
85 90 95	
Asn Phe Glu Val Thr Thr Glu Glu Glu Phe Thr Leu Phe Val Tyr Glu	
100 105 110	
Gln Leu Gln Glu Pro Gln Val Thr Met Lys Ser Val Lys Val Ser Glu	
115 120 125	
Asn Phe Ser Cys Asn Ile Thr Leu Met Cys Ser Val Lys Gly Ala Glu	
130 135 140	
Lys Ser Val Leu Tyr Ser Trp Thr Pro Arg Glu Pro His Ala Ser Glu	
139	

145		150		155		160
Ser Asn Gly Gly	Ser Ile Leu Thr Val	Ser Arg Thr Pro Cys Asp Pro				
	165	170			175	
Asp Leu Pro Tyr	Ile Cys Thr Ala Gln Asn Pro Val Ser Gln Arg Ser					
	180	185			190	
Ser Leu Pro Val His Val Gly Gln Phe Cys Thr Asp Pro Gly Ala Ser						
	195	200			205	
Arg Gly Gly Thr Thr Gly Glu Thr Val Val Gly Val Leu Gly Glu Pro						
	210	215			220	
Val Thr Leu Pro Leu Ala Leu Pro Ala Cys Arg Asp Thr Glu Lys Val						
	225	230			235	240
Val Trp Leu Phe Asn Thr Ser Ile Ile Ser Lys Glu Arg Glu Glu Ala						
	245	250			255	
Ala Thr Ala Asp Pro Leu Ile Lys Ser Arg Asp Pro Tyr Lys Asn Arg						
	260	265			270	
Val Trp Val Ser Ser Gln Asp Cys Ser Leu Lys Ile Ser Gln Leu Lys						
	275	280			285	
Ile Glu Asp Ala Gly Pro Tyr His Ala Tyr Val Cys Ser Glu Ala Ser						
	290	295			300	
Ser Val Thr Ser Met Thr His Val Thr Leu Leu Ile Tyr Arg Arg Leu						
	305	310			315	320
Arg Lys Pro Lys Ile Thr Trp Ser Leu Arg His Ser Glu Asp Gly Ile						
	325	330			335	
Cys Arg Ile Ser Leu Thr Cys Ser Val Glu Asp Gly Gly Asn Thr Val						
	340	345			350	
Met Tyr Thr Trp Thr Pro Leu Gln Lys Glu Ala Val Val Ser Gln Gly						
	355	360			365	
Glu Ser His Leu Asn Val Ser Trp Arg Ser Ser Glu Asn His Pro Asn						
	370	375			380	
Leu Thr Cys Thr Ala Ser Asn Pro Val Ser Arg Ser Ser His Gln Phe						
	385	390			395	400
Leu Ser Glu Asn Ile Cys Ser Gly Pro Glu Arg Asn Thr Lys Leu Trp						
	405	410			415	
Ile Gly Leu Phe Leu Met Val Cys Leu Leu Cys Val Gly Ile Phe Ser						
	420	425			430	
Trp Cys Ile Trp Lys Arg Lys Gly Arg Cys Ser Val Pro Ala Phe Cys						
	435	440			445	
Ser Ser Gln Ala Glu Ala Pro Ala Asp Thr Pro Glu Pro Thr Ala Gly						
	450	455			460	
His Thr Leu Tyr Ser Val Leu Ser Gln Gly Tyr Glu Lys Leu Asp Thr						
	465	470			475	480
Pro Leu Arg Pro Ala Arg Gln Gln Pro Thr Pro Thr Ser Asp Gly Ser						
						140

485										490					495				
Ser	Asp	Ser	Asn	Leu	Thr	Thr	Glu	Glu	Asp	Glu	Asp	Arg	Pro	Glu	Val				
			500					505					510						
His	Lys	Pro	Ile	Ser	Gly	Arg	Tyr	Glu	Val	Phe	Asp	Gln	Val	Thr	Gln				
		515					520					525							
Glu	Gly	Ala	Gly	His	Asp	Pro	Ala	Pro	Glu	Gly	Gln	Ala	Asp	Tyr	Asp				
	530					535					540								
Pro	Val	Thr	Pro	Tyr	Val	Thr	Glu	Val	Glu	Ser	Val	Val	Gly	Glu	Asn				
545					550					555					560				
Thr	Met	Tyr	Ala	Gln	Val	Phe	Asn	Leu	Gln	Gly	Lys	Thr	Pro	Val	Ser				
				565					570					575					
Gln	Lys	Glu	Glu	Ser	Ser	Ala	Thr	Ile	Tyr	Cys	Ser	Ile	Arg	Lys	Pro				
			580					585					590						
Gln	Val	Val	Pro	Pro	Pro	Gln	Gln	Asn	Asp	Leu	Glu	Ile	Pro	Glu	Ser				
		595					600					605							
Pro	Thr	Tyr	Glu	Asn	Phe	Thr													
	610					615													

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 <211> 1581
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(1578)

<400> 49																
atg	gga	cta	aga	gcc	tct	gga	aag	gac	tca	gcc	cca	aca	gtg	gtg	tca	48
Met	Gly	Leu	Arg	Ala	Ser	Gly	Lys	Asp	Ser	Ala	Pro	Thr	Val	Val	Ser	
1				5					10				15			
ggg	atc	cta	ggg	ggt	tcc	gtg	act	ctc	ccc	cta	aac	atc	tca	gta	gac	96
Gly	Ile	Leu	Gly	Gly	Ser	Val	Thr	Leu	Pro	Leu	Asn	Ile	Ser	Val	Asp	
			20					25					30			
aca	gag	att	gag	aac	gtc	atc	tgg	att	ggt	ccc	aaa	aat	gct	ctt	gct	144
Thr	Glu	Ile	Glu	Asn	Val	Ile	Trp	Ile	Gly	Pro	Lys	Asn	Ala	Leu	Ala	
		35				40						45				
ttc	gca	cgt	ccc	aaa	gaa	aat	gta	acc	att	atg	gtc	aaa	agc	tac	ctg	192
Phe	Ala	Arg	Pro	Lys	Glu	Asn	Val	Thr	Ile	Met	Val	Lys	Ser	Tyr	Leu	
	50					55				60						
ggc	cga	cta	gac	atc	acc	aag	tgg	agt	tac	tcc	ctg	tgc	atc	agc	aat	240
Gly	Arg	Leu	Asp	Ile	Thr	Lys	Trp	Ser	Tyr	Ser	Leu	Cys	Ile	Ser	Asn	
	65				70				75					80		
ctg	act	ctg	aat	gat	gca	gga	tcc	tac	aaa	gcc	cag	ata	aac	caa	agg	288
Leu	Thr	Leu	Asn	Asp	Ala	Gly	Ser	Tyr	Lys	Ala	Gln	Ile	Asn	Gln	Arg	
			85					90					95			
aat	ttt	gaa	gtc	acc	act	gag	gag	gaa	ttc	acc	ctg	ttc	gtc	tat	gag	336
Asn	Phe	Glu	Val	Thr	Thr	Glu	Glu	Glu	Phe	Thr	Leu	Phe	Val	Tyr	Glu	
		100					105						110			

cag ctg cag gag ccc caa gtc acc atg aag tct gtg aag gtg tct gag	384
Gln Leu Gln Glu Pro Gln Val Thr Met Lys Ser Val Lys Val Ser Glu	
115 120 125	
aac ttc tcc tgt aac atc act cta atg tgc tcc gtg aag ggg gca gag	432
Asn Phe Ser Cys Asn Ile Thr Leu Met Cys Ser Val Lys Gly Ala Glu	
130 135 140	
aaa agt gtt ctg tac agc tgg acc cca agg gaa ccc cat gct tct gag	480
Lys Ser Val Leu Tyr Ser Trp Thr Pro Arg Glu Pro His Ala Ser Glu	
145 150 155 160	
tcc aat gga ggc tcc att ctt acc gtc tcc cga aca cca tgt gac cca	528
Ser Asn Gly Gly Ser Ile Leu Thr Val Ser Arg Thr Pro Cys Asp Pro	
165 170 175	
gac ctg cca tac atc tgc aca gcc cag aac ccc gtc agc cag aga agc	576
Asp Leu Pro Tyr Ile Cys Thr Ala Gln Asn Pro Val Ser Gln Arg Ser	
180 185 190	
tcc ctc cct gtc cat gtt ggg cag ttc tgt aca gat cca gga gcc tcc	624
Ser Leu Pro Val His Val Gly Gln Phe Cys Thr Asp Pro Gly Ala Ser	
195 200 205	
aga gga gga aca acg ggg gag act gtg gta ggg gtc ctg gga gag cca	672
Arg Gly Gly Thr Thr Gly Glu Thr Val Val Gly Val Leu Gly Glu Pro	
210 215 220	
gtc acc ctg cca ctt gca ctc cca gcc tgc cgg gac aca gag aag gtt	720
Val Thr Leu Pro Leu Ala Leu Pro Ala Cys Arg Asp Thr Glu Lys Val	
225 230 235 240	
gtc tgg ttg ttt aac aca tcc atc att agc aaa gag agg gaa gaa gca	768
Val Trp Leu Phe Asn Thr Ser Ile Ile Ser Lys Glu Arg Glu Glu Ala	
245 250 255	
gca acg gca gat cca ctc att aaa tcc agg gat cct tac aag aac agg	816
Ala Thr Ala Asp Pro Leu Ile Lys Ser Arg Asp Pro Tyr Lys Asn Arg	
260 265 270	
gtg tgg gtc tcc agc cag gac tgc tcc ctg aag atc agc cag ctg aag	864
Val Trp Val Ser Ser Gln Asp Cys Ser Leu Lys Ile Ser Gln Leu Lys	
275 280 285	
ata gag gac gcc ggc ccc tac cat gcc tac gtg tgc tca gag gcc tcc	912
Ile Glu Asp Ala Gly Pro Tyr His Ala Tyr Val Cys Ser Glu Ala Ser	
290 295 300	
agc gtc acc agc atg aca cat gtc acc ctg ctc atc tac cga cct gag	960
Ser Val Thr Ser Met Thr His Val Thr Leu Leu Ile Tyr Arg Pro Glu	
305 310 315 320	
aga aac aca aag ctt tgg att ggg ttg ttc ctg atg gtt tgc ctt ctg	1008
Arg Asn Thr Lys Leu Trp Ile Gly Leu Phe Leu Met Val Cys Leu Leu	
325 330 335	
tgc gtt ggg atc ttc agc tgg tgc att tgg aag cga aaa gga cgg tgt	1056
Cys Val Gly Ile Phe Ser Trp Cys Ile Trp Lys Arg Lys Gly Arg Cys	
340 345 350	
tca gtc cca gcc ttc tgt tcc agc caa gct gag gcc cca gcg gat aca	1104
Ser Val Pro Ala Phe Cys Ser Ser Gln Ala Glu Ala Pro Ala Asp Thr	
142	

355	360	365	
cca gaa ccc aca gct ggc cac acg cta tac tct gtg ctc tcc caa gga			1152
Pro Glu Pro Thr Ala Gly His Thr Leu Tyr Ser Val Leu Ser Gln Gly			
370	375	380	
tat gag aag ctg gac act ccc ctc agg cct gcc agg caa cag cct aca			1200
Tyr Glu Lys Leu Asp Thr Pro Leu Arg Pro Ala Arg Gln Gln Pro Thr			
385	390	395	400
ccc acc tca gac agc agc tct gac agc aac ctc aca act gag gag gat			1248
Pro Thr Ser Asp Ser Ser Ser Asp Ser Asn Leu Thr Thr Glu Glu Asp			
	405	410	415
gag gac agg cct gag gtg cac aag ccc atc agt gga aga tat gag gta			1296
Glu Asp Arg Pro Glu Val His Lys Pro Ile Ser Gly Arg Tyr Glu Val			
	420	425	430
ttt gac cag gtc act cag gag ggc gct gga cat gac cca gcc cct gag			1344
Phe Asp Gln Val Thr Gln Glu Gly Ala Gly His Asp Pro Ala Pro Glu			
	435	440	445
ggc caa gca gac tat gat ccc gtc act cca tat gtc acg gaa gtt gag			1392
Gly Gln Ala Asp Tyr Asp Pro Val Thr Pro Tyr Val Thr Glu Val Glu			
	450	455	460
tct gtg gtt gga gag aac acc atg tat gca caa gtg ttc aac tta cag			1440
Ser Val Val Gly Glu Asn Thr Met Tyr Ala Gln Val Phe Asn Leu Gln			
	465	470	475
gga aag acc cca gtt tct cag gag gaa gag agc tca gcc aca atc tac			1488
Gly Lys Thr Pro Val Ser Gln Glu Glu Glu Ser Ser Ala Thr Ile Tyr			
	485	490	495
tgc tcc ata cgg aaa cct cag gtg gtg gtg cca cca cca caa cag aat			1536
Cys Ser Ile Arg Lys Pro Gln Val Val Val Pro Pro Pro Gln Gln Asn			
	500	505	510
gat ctt gag att cct gaa agt cct acc tat gaa aat ttc acc tag			1581
Asp Leu Glu Ile Pro Glu Ser Pro Thr Tyr Glu Asn Phe Thr			
	515	520	525
<210> 50			
<211> 526			
<212> PRT			
<213> Homo sapiens			
<400> 50			
Met Gly Leu Arg Ala Ser Gly Lys Asp Ser Ala Pro Thr Val Val Ser			
1	5	10	15
Gly Ile Leu Gly Gly Ser Val Thr Leu Pro Leu Asn Ile Ser Val Asp			
	20	25	30
Thr Glu Ile Glu Asn Val Ile Trp Ile Gly Pro Lys Asn Ala Leu Ala			
	35	40	45
Phe Ala Arg Pro Lys Glu Asn Val Thr Ile Met Val Lys Ser Tyr Leu			
	50	55	60
Gly Arg Leu Asp Ile Thr Lys Trp Ser Tyr Ser Leu Cys Ile Ser Asn			
	65	70	75
			80

Leu Thr Leu Asn Asp Ala Gly Ser Tyr Lys Ala Gln Ile Asn Gln Arg
 85 90 95
 Asn Phe Glu Val Thr Thr Glu Glu Glu Phe Thr Leu Phe Val Tyr Glu
 100 105 110
 Gln Leu Gln Glu Pro Gln Val Thr Met Lys Ser Val Lys Val Ser Glu
 115 120 125
 Asn Phe Ser Cys Asn Ile Thr Leu Met Cys Ser Val Lys Gly Ala Glu
 130 135 140
 Lys Ser Val Leu Tyr Ser Trp Thr Pro Arg Glu Pro His Ala Ser Glu
 145 150 155 160
 Ser Asn Gly Gly Ser Ile Leu Thr Val Ser Arg Thr Pro Cys Asp Pro
 165 170 175
 Asp Leu Pro Tyr Ile Cys Thr Ala Gln Asn Pro Val Ser Gln Arg Ser
 180 185 190
 Ser Leu Pro Val His Val Gly Gln Phe Cys Thr Asp Pro Gly Ala Ser
 195 200 205
 Arg Gly Gly Thr Thr Gly Glu Thr Val Val Gly Val Leu Gly Glu Pro
 210 215 220
 Val Thr Leu Pro Leu Ala Leu Pro Ala Cys Arg Asp Thr Glu Lys Val
 225 230 235 240
 Val Trp Leu Phe Asn Thr Ser Ile Ile Ser Lys Glu Arg Glu Glu Ala
 245 250 255
 Ala Thr Ala Asp Pro Leu Ile Lys Ser Arg Asp Pro Tyr Lys Asn Arg
 260 265 270
 Val Trp Val Ser Ser Gln Asp Cys Ser Leu Lys Ile Ser Gln Leu Lys
 275 280 285
 Ile Glu Asp Ala Gly Pro Tyr His Ala Tyr Val Cys Ser Glu Ala Ser
 290 295 300
 Ser Val Thr Ser Met Thr His Val Thr Leu Leu Ile Tyr Arg Pro Glu
 305 310 315 320
 Arg Asn Thr Lys Leu Trp Ile Gly Leu Phe Leu Met Val Cys Leu Leu
 325 330 335
 Cys Val Gly Ile Phe Ser Trp Cys Ile Trp Lys Arg Lys Gly Arg Cys
 340 345 350
 Ser Val Pro Ala Phe Cys Ser Ser Gln Ala Glu Ala Pro Ala Asp Thr
 355 360 365
 Pro Glu Pro Thr Ala Gly His Thr Leu Tyr Ser Val Leu Ser Gln Gly
 370 375 380
 Tyr Glu Lys Leu Asp Thr Pro Leu Arg Pro Ala Arg Gln Gln Pro Thr
 385 390 395 400
 Pro Thr Ser Asp Ser Ser Ser Asp Ser Asn Leu Thr Thr Glu Glu Asp
 405 410 415

Glu Asp Arg Pro Glu Val His Lys Pro Ile Ser Gly Arg Tyr Glu Val
 420 425 430
 Phe Asp Gln Val Thr Gln Glu Gly Ala Gly His Asp Pro Ala Pro Glu
 435 440 445
 Gly Gln Ala Asp Tyr Asp Pro Val Thr Pro Tyr Val Thr Glu Val Glu
 450 455 460
 Ser Val Val Gly Glu Asn Thr Met Tyr Ala Gln Val Phe Asn Leu Gln
 465 470 475 480
 Gly Lys Thr Pro Val Ser Gln Glu Glu Glu Ser Ser Ala Thr Ile Tyr
 485 490 495
 Cys Ser Ile Arg Lys Pro Gln Val Val Val Pro Pro Pro Gln Gln Asn
 500 505 510
 Asp Leu Glu Ile Pro Glu Ser Pro Thr Tyr Glu Asn Phe Thr
 515 520 525

<210> 51
 <211> 375
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1) .. (375)

<400> 51
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 His Pro Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val
 1 5 10 15
 cgg cag cgg tac ctc tac aca gat gat gcc cag cag aca gaa gcc cac 96
 Arg Gln Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His
 20 25 30
 ctg gag atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc 144
 Leu Glu Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser
 35 40 45
 ccc gaa agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att caa 192
 Pro Glu Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln
 50 55 60
 atc ttg gga gtc aag aca tcc agg ttc ctg tgc cag cgg cca gat ggg 240
 Ile Leu Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly
 65 70 75 80
 gcc ctg tat gga tcg ctc cac ttt gac cct gag gcc tgc agc ttc cgg 288
 Ala Leu Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg
 85 90 95
 gag ctg ctt ctt gag gac gga tac aat gtt tac cag tcc gaa gcc cac 336
 Glu Leu Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His
 100 105 110
 ggc ctc ccg ctg cac ctg cca ggg tta cag agg agg ctc 375
 Gly Leu Pro Leu His Leu Pro Gly Leu Gln Arg Arg Leu
 115 120 125

<210> 52
 <211> 125
 <212> PRT
 <213> Homo sapiens

<400> 52
 His Pro Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val
 1 5 10 15
 Arg Gln Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His
 20 25 30
 Leu Glu Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser
 35 40 45
 Pro Glu Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln
 50 55 60
 Ile Leu Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly
 65 70 75 80
 Ala Leu Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg
 85 90 95
 Glu Leu Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His
 100 105 110
 Gly Leu Pro Leu His Leu Pro Gly Leu Gln Arg Arg Leu
 115 120 125

<210> 53
 <211> 549
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1) .. (549)

<400> 53
 cac ccc atc cct gac tcc agt cct ctc ctg caa ttc ggg ggc caa gtc 48
 His Pro Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val
 1 5 10 15
 cgg cag cgg tac ctc tac aca gat gat gcc cag cag aca gaa gcc cac 96
 Arg Gln Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His
 20 25 30
 ctg gag atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc 144
 Leu Glu Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser
 35 40 45
 ccc gaa agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att caa 192
 Pro Glu Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln
 50 55 60
 atc ctg gga gtc aag aca tcc agg ttc ctg tgc cag cgg cca gat ggg 240
 Ile Leu Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly
 65 70 75 80
 gcc ctg tat gga tcg ctc cac ttt gac cct gag gcc tgc agc ttc cgg 288
 Ala Leu Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg
 85 90 95
 146

gag ctg ctt ctt gag gac gga tac aat gtt tac cag tcc gaa gcc cac 336
 Glu Leu Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His
 100 105 110

ggc ctc ccg ctg cac ctg cca ggg aac aag tcc cca cac cgg gac cct 384
 Gly Leu Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro
 115 120 125

gca ccc cga gga cca gct cgc ttc ctg cca cta cca ggc ctg ccc ccc 432
 Ala Pro Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro
 130 135 140

gca ctc ccg gag cca ccc gga atc ctg gcc ccc cag ccc ccc gat gtg 480
 Ala Leu Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val
 145 150 155 160

ggc tcc tcg gac cct ctg agc atg gtg gga ttc cca ggg ccg aag ccc 528
 Gly Ser Ser Asp Pro Leu Ser Met Val Gly Phe Pro Gly Pro Lys Pro
 165 170 175

cag cta cgc ttc cct cga ggg 549
 Gln Leu Arg Phe Pro Arg Gly
 180

<210> 54
 <211> 183
 <212> PRT
 <213> Homo sapiens

<400> 54
 His Pro Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val
 1 5 10 15
 Arg Gln Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His
 20 25 30
 Leu Glu Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser
 35 40 45
 Pro Glu Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln
 50 55 60
 Ile Leu Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly
 65 70 75 80
 Ala Leu Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg
 85 90 95
 Glu Leu Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His
 100 105 110
 Gly Leu Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro
 115 120 125
 Ala Pro Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro
 130 135 140
 Ala Leu Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val
 145 150 155 160
 Gly Ser Ser Asp Pro Leu Ser Met Val Gly Phe Pro Gly Pro Lys Pro
 165 170 175
 147

Gln Leu Arg Phe Pro Arg Gly
180

<210> 55

<211> 643

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (9) .. (635)

<400> 55

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agccattg atg gac tcg gac gag acc ggg ttc gag cac tca gga ctg tgg      50
      Met Asp Ser Asp Glu Thr Gly Phe Glu His Ser Gly Leu Trp
          1              5              10

gtt tct gtg ctg gct ggt ctt ctg ctg gga gcc tgc cag gca cac ccc      98
Val Ser Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro
  15              20              25              30

atc cct gac tcc agt cct ctc ctg caa ttc ggg ggc caa gtc cgg cag      146
Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln
          35              40              45

cgg tac ctc tac aca gat gat gcc cag cag aca gaa gcc cac ctg gag      194
Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu
          50              55              60

atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc ccc gaa      242
Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu
          65              70              75

agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att caa atc ttg      290
Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu
          80              85              90

gga gtc aag aca tcc agg ttc ctg tgc cag cgg cca gat ggg gcc ccg      338
Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Pro
          95              100              105              110

tat gga tcg ctc cac ttt gac cct gag gcc tgc agc ttc cgg gag ctg      386
Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu
          115              120              125

ctt ctt gag gac gga tac aat gtt tac cag tcc gaa gcc cac ggc ctc      434
Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu
          130              135              140

ccg ctg cac ctg cca ggg aac aag tcc cca cac cgg gac cct gca ccc      482
Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro
          145              150              155

cga gga cca gct cgc ttc ctg cca cta cca ggc ctg ccc ccc gca ctc      530
Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu
          160              165              170

ccg gag cca ccc gga atc ctg gcc ccc cag ccc ccc gat gtg ggc tcc      578
Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser
          175              180              185              190

tcg gac cct ctg agc atg gtg gga cct tcc cag ggc cga agc ccc agc      626
          148
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Ser Asp Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser
195 200 205

tac gct tcc tgaagcca
Tyr Ala Ser

643

<210> 56
<211> 209
<212> PRT
<213> Homo sapiens

<400> 56
Met Asp Ser Asp Glu Thr Gly Phe Glu His Ser Gly Leu Trp Val Ser
1 5 10 15

Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro Ile Pro
20 25 30

Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln Arg Tyr
35 40 45

Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu Ile Arg
50 55 60

Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu Ser Leu
65 70 75 80

Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu Gly Val
85 90 95

Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Pro Tyr Gly
100 105 110

Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu Leu
115 120 125

Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro Leu
130 135 140

His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro Arg Gly
145 150 155 160

Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu Pro Glu
165 170 175

Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser Ser Asp
180 185 190

Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser Tyr Ala
195 200 205

Ser

<210> 57
<211> 643
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (9)..(635)

<400> 57
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Met Asp Ser Asp Glu Thr Gly Phe Glu His Ser Gly Leu Trp
1 5 10

ggt tct gtg ctg gct ggt ctt ctg ctg gga gcc tgc cag gca cac ccc 98
Val Ser Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro
15 20 25 30

atc cct gac tcc agt cct ctc ctg caa ttc ggg ggc caa gtc cgg cag 146
Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln
35 40 45

cgg tac ctc tac aca gat gat gcc cag cag aca gaa gcc cac ctg gag 194
Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu
50 55 60

atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc ccc gaa 242
Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu
65 70 75

agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att caa atc ttg 290
Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu
80 85 90

gga gtc aag aca tcc ggg ttc ctg tgc cag cgg cca gat ggg gcc ctg 338
Gly Val Lys Thr Ser Gly Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu
95 100 105 110

tat gga tcg ctc cac ttt gac cct gag gcc tgc agc ttc cgg gag ctg 386
Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu
115 120 125

ctt ctt gag gac gga tac aat gtt tac cag tcc gaa gcc cac ggc ctc 434
Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu
130 135 140

ccg ctg cac ctg cca ggg aac aag tcc cca cac cgg gac cct gca ccc 482
Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro
145 150 155

cga gga cca gct cgc ttc ctg cca cta cca ggc ctg ccc ccc gca ctc 530
Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu
160 165 170

ccg gag cca ccc gga atc ctg gcc ccc cag ccc ccc gat gtg ggc tcc 578
Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser
175 180 185 190

tcg gac cct ctg agc atg gtg gga cct tcc cag ggc cga agc ccc agc 626
Ser Asp Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser
195 200 205

tac gct tcc tgaagcca 643
Tyr Ala Ser

<210> 58
<211> 209
<212> PRT
<213> Homo sapiens

<400> 58

Met Asp Ser Asp Glu Thr Gly Phe Glu His Ser Gly Leu Trp Val Ser
1 5 10 15
Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro Ile Pro
20 25 30
Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln Arg Tyr
35 40 45
Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu Ile Arg
50 55 60
Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu Ser Leu
65 70 75 80
Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu Gly Val
85 90 95
Lys Thr Ser Gly Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu Tyr Gly
100 105 110
Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu Leu
115 120 125
Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro Leu
130 135 140
His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro Arg Gly
145 150 155 160
Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu Pro Glu
165 170 175
Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser Ser Asp
180 185 190
Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser Tyr Ala
195 200 205

Ser

<210> 59

<211> 643

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (9)..(281)

<400> 59

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1 5 10
gtt tct gtg ctg gct ggt ctt ctg ctg gga gcc tgc cag gca cac ccc 98
Val Ser Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro
15 20 25 30
atc cct gac tcc agt cct ctc ctg caa ttc ggg ggc caa gtc cgg cag 146
Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln
151

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35          40          45
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Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu
50          55          60

atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc ccc gaa 242
Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu
65          70          75

agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att taaatcttgg 291
Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile
80          85          90

gagtcaagac atccagggttc ctgtgccagc ggccagatgg ggccctgtat ggatcgctcc 351
actttgaccc tgaggcctgc agcttcggg agctgcttct tgaggacgga tacaatgttt 411
accagtcgga agcccacggc ctcccgtgc acctgccagg gaacaagtcc ccacaccggg 471
accctgcacc ccgaggacca gctcgcttcc tgccactacc aggcctgccc cccgcactcc 531
cggagccacc cggaatcctg gccccccagc ccccgatgt gggctcctcg gaccctctga 591
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<210> 60
<211> 91
<212> PRT
<213> Homo sapiens

<400> 60
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Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro Ile Pro
20          25          30
Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln Arg Tyr
35          40          45
Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu Ile Arg
50          55          60
Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu Ser Leu
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Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile
85          90

<210> 61
<211> 643
<212> DNA
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<220>
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<222> (9)..(635)

<400> 61
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1          5          10

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Val Ser Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro	
15 20 25 30	
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Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln	
35 40 45	
cgg tac ctc tac aca gat gat gcc cgg cag aca gaa gcc cac ctg gag	194
Arg Tyr Leu Tyr Thr Asp Asp Ala Arg Gln Thr Glu Ala His Leu Glu	
50 55 60	
atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc ccc gaa	242
Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu	
65 70 75	
agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att caa atc ttg	290
Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu	
80 85 90	
gga gtc aag aca tcc agg ttc ctg tgc cag cgg cca gat ggg gcc ctg	338
Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu	
95 100 105 110	
tat gga tcg ctc cac ttt gac cct gag gcc tgc agc ttc cgg gag ctg	386
Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu	
115 120 125	
ctt ctt gag gac gga tac aat gtt tac cag tcc gaa gcc cac ggc ctc	434
Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu	
130 135 140	
ccg ctg cac ctg cca ggg aac aag tcc cca cac cgg gac cct gca ccc	482
Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro	
145 150 155	
cga gga cca gct cgc ttc ctg cca cta cca ggc ctg ccc ccc gca ctc	530
Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu	
160 165 170	
ccg gag cca ccc gga atc ctg gcc ccc cag ccc ccc gat gtg ggc tcc	578
Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser	
175 180 185 190	
tcg gac cct ctg agc atg gtg gga cct tcc cag ggc cga agc ccc agc	626
Ser Asp Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser	
195 200 205	
tac gct tcc tgaagcca	643
Tyr Ala Ser	

<210> 62

<211> 209

<212> PRT

<213> Homo sapiens

<400> 62

Met Asp Ser Asp Glu Thr Gly Phe Glu His Ser Gly Leu Trp Val Ser
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Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro Ile Pro
153

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Asp	Ser	Ser	Pro	Leu	Leu	Gln	Phe	Gly	Gly	Gln	Val	Arg	Gln	Arg	Tyr
35					40					45					
Leu	Tyr	Thr	Asp	Asp	Ala	Arg	Gln	Thr	Glu	Ala	His	Leu	Glu	Ile	Arg
50					55					60					
Glu	Asp	Gly	Thr	Val	Gly	Gly	Ala	Ala	Asp	Gln	Ser	Pro	Glu	Ser	Leu
65					70					75					
Leu	Gln	Leu	Lys	Ala	Leu	Lys	Pro	Gly	Val	Ile	Gln	Ile	Leu	Gly	Val
85					90					95					
Lys	Thr	Ser	Arg	Phe	Leu	Cys	Gln	Arg	Pro	Asp	Gly	Ala	Leu	Tyr	Gly
100					105					110					
Ser	Leu	His	Phe	Asp	Pro	Glu	Ala	Cys	Ser	Phe	Arg	Glu	Leu	Leu	Leu
115					120					125					
Glu	Asp	Gly	Tyr	Asn	Val	Tyr	Gln	Ser	Glu	Ala	His	Gly	Leu	Pro	Leu
130					135					140					
His	Leu	Pro	Gly	Asn	Lys	Ser	Pro	His	Arg	Asp	Pro	Ala	Pro	Arg	Gly
145					150					155					
Pro	Ala	Arg	Phe	Leu	Pro	Leu	Pro	Gly	Leu	Pro	Pro	Ala	Leu	Pro	Glu
165					170					175					
Pro	Pro	Gly	Ile	Leu	Ala	Pro	Gln	Pro	Pro	Asp	Val	Gly	Ser	Ser	Asp
180					185					190					
Pro	Leu	Ser	Met	Val	Gly	Pro	Ser	Gln	Gly	Arg	Ser	Pro	Ser	Tyr	Ala
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Ser

<210> 63
 <211> 643
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (9)..(635)

<400> 63																
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	1				5				10							
gtt	tct	gtg	ctg	gct	ggg	cct	ctg	ctg	gga	gcc	tgc	cag	gca	cac	ccc	98
Val	Ser	Val	Leu	Ala	Gly	Pro	Leu	Leu	Gly	Ala	Cys	Gln	Ala	His	Pro	
15				20					25					30		
atc	cct	gac	tcc	agt	cct	ctc	ctg	caa	ttc	ggg	ggc	caa	gtc	cgg	cag	146
Ile	Pro	Asp	Ser	Ser	Pro	Leu	Leu	Gln	Phe	Gly	Gly	Gln	Val	Arg	Gln	
			35					40					45			
cgg	tac	ctc	tac	aca	gat	gat	gcc	cag	cag	aca	gaa	gcc	cac	ctg	gag	194
Arg	Tyr	Leu	Tyr	Thr	Asp	Asp	Ala	Gln	Gln	Thr	Glu	Ala	His	Leu	Glu	
		50					55					60				

atc	agg	gag	gat	ggg	acg	gtg	ggg	ggc	gct	gct	gac	cag	agc	ccc	gaa	242
Ile	Arg	Glu	Asp	Gly	Thr	Val	Gly	Gly	Ala	Ala	Asp	Gln	Ser	Pro	Glu	
		65					70					75				
agt	ctc	ctg	cag	ctg	aaa	gcc	ttg	aag	ccg	gga	gtt	att	caa	atc	ttg	290
Ser	Leu	Leu	Gln	Leu	Lys	Ala	Leu	Lys	Pro	Gly	Val	Ile	Gln	Ile	Leu	
	80					85					90					
gga	gtc	aag	aca	tcc	agg	ttc	ctg	tgc	cag	cgg	cca	gat	ggg	gcc	ctg	338
Gly	Val	Lys	Thr	Ser	Arg	Phe	Leu	Cys	Gln	Arg	Pro	Asp	Gly	Ala	Leu	
	95				100					105					110	
tat	gga	tcg	ctc	cac	ttt	gac	cct	gag	gcc	tgc	agc	ttc	cgg	gag	ctg	386
Tyr	Gly	Ser	Leu	His	Phe	Asp	Pro	Glu	Ala	Cys	Ser	Phe	Arg	Glu	Leu	
				115					120					125		
ctt	ctt	gag	gac	gga	tac	aat	gtt	tac	cag	tcc	gaa	gcc	cac	ggc	ctc	434
Leu	Leu	Glu	Asp	Gly	Tyr	Asn	Val	Tyr	Gln	Ser	Glu	Ala	His	Gly	Leu	
			130					135					140			
ccg	ctg	cac	ctg	cca	ggg	aac	aag	tcc	cca	cac	cgg	gac	cct	gca	ccc	482
Pro	Leu	His	Leu	Pro	Gly	Asn	Lys	Ser	Pro	His	Arg	Asp	Pro	Ala	Pro	
		145					150					155				
cga	gga	cca	gct	cgc	ttc	ctg	cca	cta	cca	ggc	ctg	ccc	ccc	gca	ctc	530
Arg	Gly	Pro	Ala	Arg	Phe	Leu	Pro	Leu	Pro	Gly	Leu	Pro	Pro	Ala	Leu	
	160					165					170					
ccg	gag	cca	ccc	gga	atc	ctg	gcc	ccc	cag	ccc	ccc	gat	gtg	ggc	tcc	578
Pro	Glu	Pro	Pro	Gly	Ile	Leu	Ala	Pro	Gln	Pro	Pro	Asp	Val	Gly	Ser	
	175				180					185					190	
tcg	gac	cct	ctg	agc	atg	gtg	gga	cct	tcc	cag	ggc	cga	agc	ccc	agc	626
Ser	Asp	Pro	Leu	Ser	Met	Val	Gly	Pro	Ser	Gln	Gly	Arg	Ser	Pro	Ser	
				195				200						205		
tac	gct	tcc	tgaagcca													643
Tyr	Ala	Ser														

<210> 64

<211> 209

<212> PRT

<213> Homo sapiens

<400> 64

Met	Asp	Ser	Asp	Glu	Thr	Gly	Phe	Glu	His	Ser	Gly	Leu	Trp	Val	Ser	
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Val	Leu	Ala	Gly	Pro	Leu	Leu	Gly	Ala	Cys	Gln	Ala	His	Pro	Ile	Pro	
		20						25					30			
Asp	Ser	Ser	Pro	Leu	Leu	Gln	Phe	Gly	Gly	Gln	Val	Arg	Gln	Arg	Tyr	
		35					40					45				
Leu	Tyr	Thr	Asp	Asp	Ala	Gln	Gln	Thr	Glu	Ala	His	Leu	Glu	Ile	Arg	
	50					55					60					
Glu	Asp	Gly	Thr	Val	Gly	Gly	Ala	Ala	Asp	Gln	Ser	Pro	Glu	Ser	Leu	
	65				70					75					80	
Leu	Gln	Leu	Lys	Ala	Leu	Lys	Pro	Gly	Val	Ile	Gln	Ile	Leu	Gly	Val	
									155							

Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu Tyr Gly
 100 105 110
 Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu Leu
 115 120 125
 Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro Leu
 130 135 140
 His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro Arg Gly
 145 150 155 160
 Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu Pro Glu
 165 170 175
 Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser Ser Asp
 180 185 190
 Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser Tyr Ala
 195 200 205

Ser

<210> 65

<211> 643

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (9)..(635)

<400> 65

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 1 5 10
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 Val Ser Ala Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro
 15 20 25 30
 atc cct gac tcc agt cct ctc ctg caa ttc ggg ggc caa gtc cgg cag 146
 Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln
 35 40 45
 cgg tac ctc tac aca gat gat gcc cag cag aca gaa gcc cac ctg gag 194
 Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu
 50 55 60
 atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc ccc gaa 242
 Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu
 65 70 75
 agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att caa atc ttg 290
 Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu
 80 85 90
 gga gtc aag aca tcc agg ttc ctg tgc cag cgg cca gat ggg gcc ctg 338
 Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu
 95 100 105 110
 156

tat gga tgc ctc cac ttt gac cct gag gcc tgc agc ttc cgg gag ctg	386
Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu	
115 120 125	
ctt ctt gag gac gga tac aat gtt tac cag tcc gaa gcc cac ggc ctc	434
Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu	
130 135 140	
ccg ctg cac ctg cca ggg aac aag tcc cca cac cgg gac cct gca ccc	482
Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro	
145 150 155	
cga gga cca gct cgc ttc ctg cca cta cca ggc ctg ccc ccc gca ctc	530
Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu	
160 165 170	
ccg gag cca ccc gga atc ctg gcc ccc cag ccc ccc gat gtg ggc tcc	578
Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser	
175 180 185 190	
tgc gac cct ctg agc atg gtg gga cct tcc cag ggc cga agc ccc agc	626
Ser Asp Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser	
195 200 205	
tac gct tcc tgaagcca	643
Tyr Ala Ser	

<210> 66
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 <212> PRT
 <213> Homo sapiens

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Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln Arg Tyr	
35 40 45	
Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu Ile Arg	
50 55 60	
Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu Ser Leu	
65 70 75 80	
Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu Gly Val	
85 90 95	
Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu Tyr Gly	
100 105 110	
Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu Leu	
115 120 125	
Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro Leu	
130 135 140	
His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro Arg Gly	
157	

145		150		155		160									
Pro	Ala	Arg	Phe	Leu	Pro	Leu	Pro	Gly	Leu	Pro	Pro	Ala	Leu	Pro	Glu
				165					170					175	
Pro	Pro	Gly	Ile	Leu	Ala	Pro	Gln	Pro	Pro	Asp	Val	Gly	Ser	Ser	Asp
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Pro	Leu	Ser	Met	Val	Gly	Pro	Ser	Gln	Gly	Arg	Ser	Pro	Ser	Tyr	Ala
		195					200					205			

Ser

<210> 67
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 <212> DNA
 <213> Homo sapiens

<220>
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gtt tct gtg ctg gct ggt ctt ctg ctg gga gcc tgc cag gca cac ccc	98
Val Ser Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro	
15 20 25 30	
atc cct gac tcc agt cct ctc ctg caa ttc ggg ggc caa gtc cgg cag	146
Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln	
35 40 45	
cgg tac ctc tac aca gat gat gcc cag cag aca gaa gcc cac ctg gag	194
Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu	
50 55 60	
atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc ccc gaa	242
Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu	
65 70 75	
agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att caa atc ttg	290
Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu	
80 85 90	
gga gtc aag aca tcc agg ttc ctg tgc cag cgg cca gat ggg gcc ctg	338
Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu	
95 100 105 110	
tat gga tcg ctc cac ttt gac cct gag gcc tgc agc ttc cgg gag ctg	386
Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu	
115 120 125	
ctt ctt gag gac gga tac aat gtt tac cag tcc gaa gcc cac ggc ctc	434
Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu	
130 135 140	
ccg ctg cac ctg cca ggg aac aag tcc cca cac cgg gac cct gca ccc	482
Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro	
145 150 155	

cga gga cca gct cgc ttc ctg cca cta cca ggc ctg ccc ccc gca ctc	530
Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu	
160 165 170	
ccg gag cca ccc gga atc ctg gcc ccc cag ccc ccc gat gtg ggc tcc	578
Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser	
175 180 185 190	
tcg gac cct ctg agc atg gtg gga cct tcc cag ggc cga agc ccc agc	626
Ser Asp Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser	
195 200 205	
tac gct tcc tgaagcca	643
Tyr Ala Ser	

<210> 68
 <211> 209
 <212> PRT
 <213> Homo sapiens

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Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln Arg Tyr	
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Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu Ile Arg	
50 55 60	
Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu Ser Leu	
65 70 75 80	
Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu Gly Val	
85 90 95	
Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu Tyr Gly	
100 105 110	
Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu Leu	
115 120 125	
Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro Leu	
130 135 140	
His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro Arg Gly	
145 150 155 160	
Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu Pro Glu	
165 170 175	
Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser Ser Asp	
180 185 190	
Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser Tyr Ala	
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Ser

<210> 69
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (9)..(635)

<400> 69

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gtt tct gtg ctg gct ggt ctt ctg ctg gga gcc tgc cag gca cac ccc      98
Val Ser Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro
      15              20              25              30

atc cct gac tcc agt cct ctc ctg caa ttc ggg ggc caa gtc cgg cag      146
Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln
            35              40              45

cgg tac ctc tac aca gat gat gcc cag cag aca gaa gcc cac ctg gag      194
Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu
            50              55              60

atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc ccc gaa      242
Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu
            65              70              75

agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att caa atc ttg      290
Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu
            80              85              90

gga gtc aag aca tcc agg ttc ctg tgc cag cgg cca gat ggg gcc ctg      338
Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu
            95              100              105              110

tat gga tcg ctc cac ttt gac cct gag gcc tgc agc ttc cgg gag ctg      386
Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu
            115              120              125

ctt ctt gag gac gga tac aat gtt tac cag tcc gaa gcc cac ggc ctc      434
Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu
            130              135              140

ccg ctg cac ctg cca ggg aac aag tcc cca cac cgg gac cct gca ccc      482
Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro
            145              150              155

cga gga cca gct cgc ttc ctg cca cta cca ggc ctg ccc ccc gca ctc      530
Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu
            160              165              170

ccg gag cca ccc gga atc ctg gcc ccc cag ccc ccc gat gtg ggc tcc      578
Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser
            175              180              185              190

tcg gac cct ctg agc atg gtg gga cct tcc cag ggc cga agc ccc agc      626
Ser Asp Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser
            195              200              205
            160

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tac gct tcc tgaagcca
Tyr Ala Ser

643

<210> 70
<211> 209
<212> PRT
<213> Homo sapiens

<400> 70
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20 25 30
Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln Arg Tyr
35 40 45
Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu Ile Arg
50 55 60
Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu Ser Leu
65 70 75 80
Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu Gly Val
85 90 95
Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu Tyr Gly
100 105 110
Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu Leu
115 120 125
Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro Leu
130 135 140
His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro Arg Gly
145 150 155 160
Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu Pro Glu
165 170 175
Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser Ser Asp
180 185 190
Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser Tyr Ala
195 200 205

Ser

<210> 71
<211> 643
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (9) .. (635)

<400> 71

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Val Ser Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro	
15 20 25 30	
atc cct gac tcc agt cct ctc ctg caa ttc ggg ggc caa gtc cgg cag	146
Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln	
35 40 45	
cgg tac ctc tac aca gat gat gcc cag cag aca gaa gcc cac ctg gag	194
Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu	
50 55 60	
atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc ccc gaa	242
Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu	
65 70 75	
agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att caa atc ttg	290
Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu	
80 85 90	
gga gtc aag aca tcc agg ttc ctg tgc cag cgg cca gat ggg gcc ctg	338
Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu	
95 100 105 110	
tat gga tcg ctc cac ttt gac cct gag gcc tgc agc ttc cgg gag ctg	386
Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu	
115 120 125	
ctt ctt gag gac gga tac aat gtt tac cag tcc gaa gcc cac ggc ctc	434
Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu	
130 135 140	
ccg ctg cac cag cca ggg aac aag tcc cca cac cgg gac cct gca ccc	482
Pro Leu His Gln Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro	
145 150 155	
cga gga cca gct cgc ttc ctg cca cta cca ggc ctg ccc ccc gca ctc	530
Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu	
160 165 170	
ccg gag cca ccc gga atc ctg gcc ccc cag ccc ccc gat gtg ggc tcc	578
Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser	
175 180 185 190	
tcg gac cct ctg agc atg gtg gga cct tcc cag ggc cga agc ccc agc	626
Ser Asp Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser	
195 200 205	
tac gct tcc tgaagcca	643
Tyr Ala Ser	

<210> 72

<211> 209

<212> PRT

<213> Homo sapiens

<400> 72

Met Asp Ser Asp Glu Thr Gly Phe Glu His Ser Gly Leu Trp Val Ser
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1	5	10	15
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20		25	30
Asp Ser Ser Pro	Leu Leu Gln Phe	Gly Gly Gln Val Arg	Gln Arg Tyr
35	40	45	
Leu Tyr Thr Asp	Asp Ala Gln Gln	Thr Glu Ala His	Leu Glu Ile Arg
50	55	60	
Glu Asp Gly Thr	Val Gly Gly Ala	Ala Asp Gln Ser	Pro Glu Ser Leu
65	70	75	80
Leu Gln Leu Lys	Ala Leu Lys Pro	Gly Val Ile Gln	Ile Leu Gly Val
	85	90	95
Lys Thr Ser Arg	Phe Leu Cys Gln	Arg Pro Asp Gly	Ala Leu Tyr Gly
	100	105	110
Ser Leu His Phe	Asp Pro Glu Ala	Cys Ser Phe Arg	Glu Leu Leu Leu
	115	120	125
Glu Asp Gly Tyr	Asn Val Tyr Gln	Ser Glu Ala His	Gly Leu Pro Leu
130	135	140	
His Gln Pro Gly	Asn Lys Ser Pro	His Arg Asp Pro	Ala Pro Arg Gly
145	150	155	160
Pro Ala Arg Phe	Leu Pro Leu Pro	Gly Leu Pro Pro	Ala Leu Pro Glu
	165	170	175
Pro Pro Gly Ile	Leu Ala Pro Gln	Pro Pro Asp Val	Gly Ser Ser Asp
	180	185	190
Pro Leu Ser Met	Val Gly Pro Ser	Gln Gly Arg Ser	Pro Ser Tyr Ala
	195	200	205

Ser

<210> 73
 <211> 643
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (9)..(635)

<400> 73		
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gtt tct gtg ctg gct ggt ctt ctg ctg gga gcc tgc cag gca cac ccc		98
Val Ser Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro		
15 20 25 30		
atc cct gac tcc agt cct ctc ctg caa ttc ggg ggc caa gtc cgg cag		146
Ile Pro Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln		
35 40 45		

cgg tac ctc tac aca gat gat gcc cag cag aca gaa gcc cac ctg gag	194
Arg Tyr Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu	
50 55 60	
atc agg gag gat ggg acg gtg ggg ggc gct gct gac cag agc ccc gaa	242
Ile Arg Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu	
65 70 75	
agt ctc ctg cag ctg aaa gcc ttg aag ccg gga gtt att caa atc ttg	290
Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu	
80 85 90	
gga gtc aag aca tcc agg ttc ctg tgc cag cgg cca gat ggg gcc ctg	338
Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu	
95 100 105 110	
tat gga tcg ctc cac ttt gac cct gag gcc tgc agc ttc cgg gag ctg	386
Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu	
115 120 125	
ctt ctt gag gac gga tac aat gtt tac cag tcc gaa gcc cac ggc ctc	434
Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu	
130 135 140	
ccg ctg cac ctg cca ggg aac aag tcc cca cac cgg gac cct gca ccc	482
Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro	
145 150 155	
cga gga cca gct cgc ttc ctg cca cta cca ggc cag ccc ccc gca ctc	530
Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Gln Pro Pro Ala Leu	
160 165 170	
ccg gag cca ccc gga atc ctg gcc ccc cag ccc ccc gat gtg ggc tcc	578
Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser	
175 180 185 190	
tcg gac cct ctg agc atg gtg gga cct tcc cag ggc cga agc ccc agc	626
Ser Asp Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser	
195 200 205	
tac gct tcc tgaagcca	643
Tyr Ala Ser	

<210> 74

<211> 209

<212> PRT

<213> Homo sapiens

<400> 74

Met Asp Ser Asp Glu Thr Gly Phe Glu His Ser Gly Leu Trp Val Ser
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Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro Ile Pro
20 25 30

Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln Arg Tyr
35 40 45

Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu Ile Arg
50 55 60

Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu Ser Leu
164

65		70		75		80									
Leu	Gln	Leu	Lys	Ala	Leu	Lys	Pro	Gly	Val	Ile	Gln	Ile	Leu	Gly	Val
				85					90					95	
Lys	Thr	Ser	Arg	Phe	Leu	Cys	Gln	Arg	Pro	Asp	Gly	Ala	Leu	Tyr	Gly
			100					105					110		
Ser	Leu	His	Phe	Asp	Pro	Glu	Ala	Cys	Ser	Phe	Arg	Glu	Leu	Leu	Leu
		115					120					125			
Glu	Asp	Gly	Tyr	Asn	Val	Tyr	Gln	Ser	Glu	Ala	His	Gly	Leu	Pro	Leu
	130					135					140				
His	Leu	Pro	Gly	Asn	Lys	Ser	Pro	His	Arg	Asp	Pro	Ala	Pro	Arg	Gly
145					150				155						160
Pro	Ala	Arg	Phe	Leu	Pro	Leu	Pro	Gly	Gln	Pro	Pro	Ala	Leu	Pro	Glu
			165						170					175	
Pro	Pro	Gly	Ile	Leu	Ala	Pro	Gln	Pro	Pro	Asp	Val	Gly	Ser	Ser	Asp
		180					185					190			
Pro	Leu	Ser	Met	Val	Gly	Pro	Ser	Gln	Gly	Arg	Ser	Pro	Ser	Tyr	Ala
	195					200					205				

Ser

<210> 75

<211> 643

<212> DNA

<213> Homo sapiens

<220>

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<223> Wherein n may be a, c, g or t

<220>

<221> misc_feature

<222> (25)..(25)

<223> Wherein n may be a, c, g or t

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<222> (58)..(58)

<223> Wherein n may be a, c, g or t

<220>

<221> misc_feature

<222> (70)..(70)

<223> Wherein n may be a, c, g or t

<220>

<221> misc_feature

<222> (172)..(172)

<223> Wherein n may be a, c, g or t

<220>

<221> misc_feature

<222> (282)..(282)

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<222> (306)..(306)
<223> Wherein n may be a, c, g or t

<220>
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<222> (337)..(337)
<223> Wherein n may be a, c, g or t

<220>
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<223> Wherein n may be a, c, g or t

<220>
<221> misc_feature
<222> (517)..(517)
<223> Wherein n may be a, c, g or t

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tgcaattcgg gggccaagtc cggcagcggg acctctacac agatgatgcc cngcagacag 180
aagcccacct ggagatcagg gaggatggga cggggtggggg cgctgctgac cagagccccg 240
aaagtctcct gcagctgaaa gccttgaagc cgggagttat tnaaatcttg ggagtcaaga 300
catccngggt cctgtgccag cggccagatg gggcccngta tggatcgctc cactttgacc 360
ctgaggcctg cagcttccgg gagctgcttc ttgaggacgg atacaatgtt taccagtccg 420
aagcccacgg cctcccgtg caccngccag ggaacaagtc cccacaccgg gaccctgcac 480
cccagggacc agctcgcttc ctgccactac caggccngcc ccccgactc ccggagccac 540
ccggaatcct ggccccccag ccccccgatg tgggtcctc ggaccctctg agcatggtgg 600
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<210> 76
<211> 209
<212> PRT
<213> Homo sapiens

<220>
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<223> Wherein Xaa may be any naturally occurring amino acid

<220>
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<400> 76

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Xaa Leu Ala Gly Xaa Leu Leu Gly Ala Cys Gln Ala His Pro Ile Pro
          20          25          30

Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln Arg Tyr
          35          40          45

Leu Tyr Thr Asp Asp Ala Asn Gln Thr Glu Ala His Leu Glu Ile Arg
          50          55          60

Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu Ser Leu
          65          70          75          80

Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Xaa Ile Leu Gly Val
          85          90          95

Lys Thr Ser Asn Phe Leu Cys Gln Arg Pro Asp Gly Ala Xaa Tyr Gly
          100          105          110

Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu Leu
          115          120          125

Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro Leu
          130          135          140

His Xaa Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro Arg Gly
          145          150          155          160

Pro Ala Arg Phe Leu Pro Leu Pro Gly Asn Pro Pro Ala Leu Pro Glu
          165          170          175

Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser Ser Asp
          180          185          190

Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser Tyr Ala
          195          200          205
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Ser

<210> 77

<211> 1788

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(1788)

<400> 77

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gaa gaa ctt cca aac tac ctg gtg aca tta cca gcc cgg cta aat ttc      48
Glu Glu Leu Pro Asn Tyr Leu Val Thr Leu Pro Ala Arg Leu Asn Phe
 1          5          10          15

ccc tcc gtt cag aag gtt tgt ttg gac ctg agc cct ggg tac agt gat      96
Pro Ser Val Gln Lys Val Cys Leu Asp Leu Ser Pro Gly Tyr Ser Asp
          20          25          30

gtt aaa ttc acg gtt act ctg gag acc aag gac aag acc cag aag ttg      144
          167
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Val	Lys	Phe	Thr	Val	Thr	Leu	Glu	Thr	Lys	Asp	Lys	Thr	Gln	Lys	Leu	
		35					40					45				
cta	gaa	tac	tct	gga	ctg	aag	aag	agg	cac	tta	cat	tgt	atc	tcc	ttt	192
Leu	Glu	Tyr	Ser	Gly	Leu	Lys	Lys	Arg	His	Leu	His	Cys	Ile	Ser	Phe	
	50					55					60					
ctt	gta	cca	cct	cct	gct	ggt	ggc	aca	gaa	gaa	gtg	gcc	aca	atc	cgg	240
Leu	Val	Pro	Pro	Pro	Ala	Gly	Gly	Thr	Glu	Glu	Val	Ala	Thr	Ile	Arg	
	65				70					75					80	
gtg	tcg	gga	ggt	gga	aat	aac	atc	agc	ttt	gag	gag	aag	aaa	aag	gtt	288
Val	Ser	Gly	Val	Gly	Asn	Asn	Ile	Ser	Phe	Glu	Glu	Lys	Lys	Lys	Val	
				85					90						95	
cta	att	cag	agg	cag	ggg	aac	ggc	acc	ttt	gta	cag	act	gac	aaa	cct	336
Leu	Ile	Gln	Arg	Gln	Gly	Asn	Gly	Thr	Phe	Val	Gln	Thr	Asp	Lys	Pro	
			100					105					110			
ctc	tac	acc	cca	ggg	cag	caa	gtg	tat	ttc	cgc	att	gtc	acc	atg	gat	384
Leu	Tyr	Thr	Pro	Gly	Gln	Gln	Val	Tyr	Phe	Arg	Ile	Val	Thr	Met	Asp	
		115					120					125				
agc	aac	ttc	ggt	cca	gtg	aat	gac	aag	tac	tcc	atg	gtg	gaa	cta	cag	432
Ser	Asn	Phe	Val	Pro	Val	Asn	Asp	Lys	Tyr	Ser	Met	Val	Glu	Leu	Gln	
	130					135					140					
gat	cca	aat	agc	aac	agg	att	gca	cag	tgg	ctg	gaa	gtg	gta	cct	gag	480
Asp	Pro	Asn	Ser	Asn	Arg	Ile	Ala	Gln	Trp	Leu	Glu	Val	Val	Pro	Glu	
	145				150					155					160	
caa	ggc	att	gta	gac	ctg	tcc	ttc	caa	ctg	gca	cca	gag	gca	atg	ctg	528
Gln	Gly	Ile	Val	Asp	Leu	Ser	Phe	Gln	Leu	Ala	Pro	Glu	Ala	Met	Leu	
				165					170					175		
ggc	acc	tac	act	gtg	gca	gtg	gct	gag	ggc	aag	acc	ttt	ggg	act	ttc	576
Gly	Thr	Tyr	Thr	Val	Ala	Val	Ala	Glu	Gly	Lys	Thr	Phe	Gly	Thr	Phe	
			180					185					190			
agt	gtg	gag	gaa	tat	gtg	ctg	ccg	aag	ttt	aag	gtg	gaa	gtg	gtg	gaa	624
Ser	Val	Glu	Glu	Tyr	Val	Leu	Pro	Lys	Phe	Lys	Val	Glu	Val	Val	Glu	
		195					200					205				
ccc	aag	gag	tta	tca	acg	gtg	cag	gaa	tct	ttc	tta	gta	aaa	att	tgt	672
Pro	Lys	Glu	Leu	Ser	Thr	Val	Gln	Glu	Ser	Phe	Leu	Val	Lys	Ile	Cys	
	210					215					220					
tgt	agg	tac	acc	tat	gga	aag	ccc	atg	cta	ggg	gca	gtg	cag	gta	tct	720
Cys	Arg	Tyr	Thr	Tyr	Gly	Lys	Pro	Met	Leu	Gly	Ala	Val	Gln	Val	Ser	
	225				230					235					240	
gtg	tgt	cag	aag	gca	aat	act	tac	tgg	tat	cga	gag	gtg	gaa	cgg	gaa	768
Val	Cys	Gln	Lys	Ala	Asn	Thr	Tyr	Trp	Tyr	Arg	Glu	Val	Glu	Arg	Glu	
				245				250						255		
cag	ctt	cct	gac	aaa	tgc	agg	aac	ctc	tct	gga	cag	act	gac	aaa	aca	816
Gln	Leu	Pro	Asp	Lys	Cys	Arg	Asn	Leu	Ser	Gly	Gln	Thr	Asp	Lys	Thr	
			260					265					270			
gga	tgt	ttc	tca	gca	cct	gtg	gac	atg	gcc	acc	ttt	gac	ctc	att	gga	864
Gly	Cys	Phe	Ser	Ala	Pro	Val	Asp	Met	Ala	Thr	Phe	Asp	Leu	Ile	Gly	
		275					280					285				

tat gcg tac agc cat caa atc aat att gtg gct act gtt gtg gag gaa	912
Tyr Ala Tyr Ser His Gln Ile Asn Ile Val Ala Thr Val Val Glu Glu	
290 295 300	
ggg aca ggt gtg gag gcc aat gcc act cag aat atc tac att tct cca	960
Gly Thr Gly Val Glu Ala Asn Ala Thr Gln Asn Ile Tyr Ile Ser Pro	
305 310 315 320	
caa atg gga tca atg acc ttt gaa gac acc agc aat ttt tac cat cca	1008
Gln Met Gly Ser Met Thr Phe Glu Asp Thr Ser Asn Phe Tyr His Pro	
325 330 335	
aat ttc ccc ttc agt ggg aag ata aga gtt agg ggc cat gat gac tcc	1056
Asn Phe Pro Phe Ser Gly Lys Ile Arg Val Arg Gly His Asp Asp Ser	
340 345 350	
ttc ctc aag aac cat cta gtg ttt ctg gtg att tat ggc aca aat gga	1104
Phe Leu Lys Asn His Leu Val Phe Leu Val Ile Tyr Gly Thr Asn Gly	
355 360 365	
acc ttc aac cag acc ctg gtt act gat aac aat ggc cta gct ccc ttt	1152
Thr Phe Asn Gln Thr Leu Val Thr Asp Asn Asn Gly Leu Ala Pro Phe	
370 375 380	
acc ttg gag aca tcc ggt tgg aat ggg aca gac gtt tct ctg gag gga	1200
Thr Leu Glu Thr Ser Gly Trp Asn Gly Thr Asp Val Ser Leu Glu Gly	
385 390 395 400	
aag ttt caa atg gaa gac tta gta tat aat ccg gaa caa gtg cca cgt	1248
Lys Phe Gln Met Glu Asp Leu Val Tyr Asn Pro Glu Gln Val Pro Arg	
405 410 415	
tac tac caa aat gcc tac ctg cac ctg cga ccc ttc tac agc aca acc	1296
Tyr Tyr Gln Asn Ala Tyr Leu His Leu Arg Pro Phe Tyr Ser Thr Thr	
420 425 430	
cgc agc ttc ctt ggc atc cac cgg cta aac ggc ccc ttg aaa tgt ggc	1344
Arg Ser Phe Leu Gly Ile His Arg Leu Asn Gly Pro Leu Lys Cys Gly	
435 440 445	
cag ccc cag gaa gtg ctg gtg gat tat tac atc gac ccg gcc gat gca	1392
Gln Pro Gln Glu Val Leu Val Asp Tyr Tyr Ile Asp Pro Ala Asp Ala	
450 455 460	
agc cct gac caa gag atc agc ttc tcc tac tat tta ata ggg aaa gga	1440
Ser Pro Asp Gln Glu Ile Ser Phe Ser Tyr Tyr Leu Ile Gly Lys Gly	
465 470 475 480	
agt ttg gtg atg gag ggg cag aaa cac ctg aac tct aag aag aaa gga	1488
Ser Leu Val Met Glu Gly Gln Lys His Leu Asn Ser Lys Lys Lys Gly	
485 490 495	
ctg aaa gcc ccc ttc tct ctc tca ctg acc ttc act tcg aga ctg gcc	1536
Leu Lys Ala Pro Phe Ser Leu Ser Leu Thr Phe Thr Ser Arg Leu Ala	
500 505 510	
cct gat cct tcc ctg gtg atc tat gcc att ttt ccc agt gga ggt gtt	1584
Pro Asp Pro Ser Leu Val Ile Tyr Ala Ile Phe Pro Ser Gly Gly Val	
515 520 525	
gta gct gac aaa att cag ttc tca gtc gag atg tgc ttt gac aat cag	1632
Val Ala Asp Lys Ile Gln Phe Ser Val Glu Met Cys Phe Asp Asn Gln	
530 535 540	

gtt tcc ctt ggc ttc tcc ccc tcc cag cag ctt cca gga gca gaa gtg	1680
Val Ser Leu Gly Phe Ser Pro Ser Gln Gln Leu Pro Gly Ala Glu Val	
545 550 555 560	
gag ctg cag ctg cag gca gct ccc gga tcc ctg tgt gcg ctc cgg gcg	1728
Glu Leu Gln Leu Gln Ala Ala Pro Gly Ser Leu Cys Ala Leu Arg Ala	
565 570 575	
gtg gat gag agt gtc tta ctg ctt agg cca gac aga gag ctg agc aac	1776
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580 585 590	
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Arg Ser Val Tyr	
595	
<210> 78	
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<212> PRT	
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Val Lys Phe Thr Val Thr Leu Glu Thr Lys Asp Lys Thr Gln Lys Leu	
35 40 45	
Leu Glu Tyr Ser Gly Leu Lys Lys Arg His Leu His Cys Ile Ser Phe	
50 55 60	
Leu Val Pro Pro Pro Ala Gly Gly Thr Glu Glu Val Ala Thr Ile Arg	
65 70 75 80	
Val Ser Gly Val Gly Asn Asn Ile Ser Phe Glu Glu Lys Lys Lys Val	
85 90 95	
Leu Ile Gln Arg Gln Gly Asn Gly Thr Phe Val Gln Thr Asp Lys Pro	
100 105 110	
Leu Tyr Thr Pro Gly Gln Gln Val Tyr Phe Arg Ile Val Thr Met Asp	
115 120 125	
Ser Asn Phe Val Pro Val Asn Asp Lys Tyr Ser Met Val Glu Leu Gln	
130 135 140	
Asp Pro Asn Ser Asn Arg Ile Ala Gln Trp Leu Glu Val Val Pro Glu	
145 150 155 160	
Gln Gly Ile Val Asp Leu Ser Phe Gln Leu Ala Pro Glu Ala Met Leu	
165 170 175	
Gly Thr Tyr Thr Val Ala Val Ala Glu Gly Lys Thr Phe Gly Thr Phe	
180 185 190	
Ser Val Glu Glu Tyr Val Leu Pro Lys Phe Lys Val Glu Val Val Glu	
195 200 205	
Pro Lys Glu Leu Ser Thr Val Gln Glu Ser Phe Leu Val Lys Ile Cys	
170	

210					215					220					
Cys	Arg	Tyr	Thr	Tyr	Gly	Lys	Pro	Met	Leu	Gly	Ala	Val	Gln	Val	Ser
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Val	Cys	Gln	Lys	Ala	Asn	Thr	Tyr	Trp	Tyr	Arg	Glu	Val	Glu	Arg	Glu
				245					250					255	
Gln	Leu	Pro	Asp	Lys	Cys	Arg	Asn	Leu	Ser	Gly	Gln	Thr	Asp	Lys	Thr
			260					265					270		
Gly	Cys	Phe	Ser	Ala	Pro	Val	Asp	Met	Ala	Thr	Phe	Asp	Leu	Ile	Gly
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ttg gat gag ctc att aag aac act cag act tac acc ttc acc atc agc Leu Asp Glu Leu Ile Lys Asn Thr Gln Thr Tyr Thr Phe Thr Ile Ser 1410	1415		1420 4272
caa agt gtg ctg gtc acc aac ttg aaa cca gca acc atc aag gtc tat 177			4320

Gln Ser Val Leu Val Thr Asn Leu Lys Pro Ala Thr Ile Lys Val Tyr
 1425 1430 1435 1440
 gac tac tac cta cca gat gaa cag gca aca att cag tat tct gat ccc 4368
 Asp Tyr Tyr Leu Pro Asp Glu Gln Ala Thr Ile Gln Tyr Ser Asp Pro
 1445 1450 1455
 tgt gaa tgaggatagg agctggaaac tcaattagtc ctctgtgaca tttactggag 4424
 Cys Glu
 ggtggaacat tcttctgtcg cttgaagcag aactcattca atcaaataat ttaattttctc 4484
 tgactagt 4492
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 Met Trp Ala Gln Leu Leu Leu Gly Met Leu Ala Leu Ser Pro Ala Ile
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 Ala Glu Glu Leu Pro Asn Tyr Leu Val Thr Leu Pro Ala Arg Leu Asn
 20 25 30
 Phe Pro Ser Val Gln Lys Val Cys Leu Asp Leu Ser Pro Gly Tyr Ser
 35 40 45
 Asp Val Lys Phe Thr Val Thr Leu Glu Thr Lys Asp Lys Thr Gln Lys
 50 55 60
 Leu Leu Glu Tyr Ser Gly Leu Lys Lys Arg His Leu His Cys Ile Ser
 65 70 75 80
 Phe Leu Val Pro Pro Pro Ala Gly Gly Thr Glu Glu Val Ala Thr Ile
 85 90 95
 Arg Val Ser Gly Val Gly Asn Asn Ile Ser Phe Glu Glu Lys Lys Lys
 100 105 110
 Val Leu Ile Gln Arg Gln Gly Asn Gly Thr Phe Val Gln Thr Asp Lys
 115 120 125
 Pro Leu Tyr Thr Pro Gly Gln Gln Val Tyr Phe Arg Ile Val Thr Met
 130 135 140
 Asp Ser Asn Phe Val Pro Val Asn Asp Lys Tyr Ser Met Val Glu Leu
 145 150 155 160
 Gln Asp Pro Asn Ser Asn Arg Ile Ala Gln Trp Leu Glu Val Val Pro
 165 170 175
 Glu Gln Gly Ile Val Asp Leu Ser Phe Gln Leu Ala Pro Glu Ala Met
 180 185 190
 Leu Gly Thr Tyr Thr Val Ala Val Ala Glu Gly Lys Thr Phe Gly Thr
 195 200 205
 Phe Ser Val Glu Glu Tyr Val Leu Ser Pro Phe Leu Leu Leu Leu Ser
 210 215 220

Ser	Val	Leu	Pro	Lys	Phe	Lys	Val	Glu	Val	Val	Glu	Pro	Lys	Glu	Leu	225	230	235	240
Ser	Thr	Val	Gln	Glu	Ser	Phe	Leu	Val	Lys	Ile	Cys	Cys	Arg	Tyr	Thr	245	250		255
Tyr	Gly	Lys	Pro	Met	Leu	Gly	Ala	Val	Gln	Val	Ser	Val	Cys	Gln	Lys	260	265		270
Ala	Asn	Thr	Tyr	Trp	Tyr	Arg	Glu	Val	Glu	Arg	Glu	Gln	Leu	Pro	Asp	275	280		285
Lys	Cys	Arg	Asn	Leu	Ser	Gly	Gln	Thr	Asp	Lys	Thr	Gly	Cys	Phe	Ser	290	295		300
Ala	Pro	Val	Asp	Met	Ala	Thr	Phe	Asp	Leu	Ile	Gly	Tyr	Ala	Tyr	Ser	305	310		315
His	Gln	Ile	Asn	Ile	Val	Ala	Thr	Val	Val	Glu	Glu	Gly	Thr	Gly	Val	325	330		335
Glu	Ala	Asn	Ala	Thr	Gln	Asn	Ile	Tyr	Thr	Ser	Pro	Gln	Met	Gly	Ser	340	345		350
Met	Thr	Phe	Glu	Asp	Thr	Ser	Asn	Phe	Tyr	His	Pro	Asn	Phe	Pro	Phe	355	360		365
Ser	Gly	Lys	Met	Leu	Leu	Lys	Phe	Pro	Gln	Gly	Gly	Val	Leu	Pro	Cys	370	375		380
Lys	Asn	His	Leu	Val	Phe	Leu	Val	Ile	Tyr	Gly	Thr	Asn	Gly	Thr	Phe	385	390		395
Asn	Gln	Thr	Leu	Val	Thr	Asp	Asn	Asn	Gly	Leu	Ala	Pro	Phe	Thr	Leu	405	410		415
Glu	Thr	Ser	Gly	Trp	Asn	Gly	Thr	Asp	Val	Ser	Leu	Glu	Gly	Lys	Phe	420	425		430
Gln	Met	Glu	Asp	Leu	Val	Tyr	Asn	Pro	Glu	Gln	Val	Pro	Arg	Tyr	Tyr	435	440		445
Gln	Asn	Ala	Tyr	Leu	His	Leu	Arg	Pro	Phe	Tyr	Ser	Thr	Thr	Arg	Ser	450	455		460
Phe	Leu	Gly	Ile	His	Arg	Leu	Asn	Gly	Pro	Leu	Lys	Cys	Gly	Gln	Pro	465	470		475
Gln	Glu	Val	Leu	Val	Asp	Tyr	Tyr	Ile	Asp	Pro	Ala	Asp	Ala	Ser	Pro	485	490		495
Asp	Gln	Glu	Ile	Ser	Phe	Ser	Tyr	Tyr	Leu	Ile	Gly	Lys	Gly	Ser	Leu	500	505		510
Val	Met	Glu	Gly	Gln	Lys	His	Leu	Asn	Ser	Lys	Lys	Lys	Gly	Leu	Lys	515	520		525
Ala	Ser	Phe	Ser	Leu	Ser	Leu	Thr	Phe	Thr	Ser	Arg	Leu	Ala	Pro	Asp	530	535		540
Pro	Ser	Leu	Val	Ile	Tyr	Ala	Ile	Phe	Pro	Ser	Gly	Gly	Val	Val	Ala	545	550		555

Asp Lys Ile Gln Phe Ser Val Glu Met Cys Phe Asp Asn Gln Gln Leu
 565 570 575
 Pro Gly Ala Glu Val Glu Leu Gln Leu Gln Ala Ala Pro Gly Ser Leu
 580 585 590
 Cys Ala Leu Arg Ala Val Asp Glu Ser Val Leu Leu Leu Arg Pro Asp
 595 600 605
 Arg Glu Leu Ser Asn Arg Ser Val Tyr Gly Met Phe Pro Phe Trp Tyr
 610 615 620
 Gly His Tyr Pro Tyr Gln Val Ala Glu Tyr Asp Gln Cys Pro Val Ser
 625 630 635 640
 Gly Pro Trp Asp Phe Pro Gln Pro Leu Ile Asp Pro Met Pro Gln Gly
 645 650 655
 His Ser Ser Gln Arg Ser Ile Ile Trp Arg Pro Ser Phe Ser Glu Gly
 660 665 670
 Thr Asp Leu Phe Ser Phe Phe Arg Asp Val Gly Leu Lys Ile Leu Ser
 675 680 685
 Asn Ala Lys Ile Lys Lys Pro Val Asp Cys Ser His Arg Ser Pro Glu
 690 695 700
 Tyr Ser Thr Ala Met Gly Gly Gly Gly His Pro Glu Ala Phe Glu Ser
 705 710 715 720
 Ser Thr Pro Leu His Gln Ala Glu Asp Ser Gln Val Arg Gln Tyr Phe
 725 730 735
 Pro Glu Thr Trp Leu Trp Asp Leu Phe Pro Ile Gly Asn Ser Gly Lys
 740 745 750
 Glu Ala Val His Val Thr Val Pro Asp Ala Ile Thr Glu Trp Lys Ala
 755 760 765
 Met Ser Phe Cys Thr Ser Gln Ser Arg Gly Phe Gly Leu Ser Pro Thr
 770 775 780
 Val Gly Leu Thr Ala Phe Lys Pro Phe Phe Val Asp Leu Thr Leu Pro
 785 790 795 800
 Tyr Ser Val Val Arg Gly Glu Ser Phe Arg Leu Thr Ala Thr Ile Phe
 805 810 815
 Asn Tyr Leu Lys Asp Cys Ile Arg Val Gln Thr Asp Leu Ala Lys Ser
 820 825 830
 His Glu Tyr Gln Leu Glu Ser Trp Ala Asp Ser Gln Thr Ser Ser Cys
 835 840 845
 Leu Cys Ala Asp Asp Ala Lys Thr His His Trp Asn Ile Thr Ala Val
 850 855 860
 Lys Leu Gly His Ile Asn Phe Thr Ile Ser Thr Lys Ile Leu Asp Ser
 865 870 875 880
 Asn Glu Pro Cys Gly Gly Gln Lys Gly Phe Val Pro Gln Lys Gly Arg
 885 890 895

Ser Asp Thr Leu Ile Lys Pro Val Leu Val Lys Pro Glu Gly Val Leu
 900 905 910
 Val Glu Lys Thr His Ser Ser Leu Leu Cys Pro Lys Gly Gly Lys Val
 915 920 925
 Ala Ser Glu Ser Val Ser Leu Glu Leu Pro Val Asp Ile Val Pro Asp
 930 935 940
 Ser Thr Lys Ala Tyr Val Thr Val Leu Gly Asp Ile Met Gly Thr Ala
 945 950 955 960
 Leu Gln Asn Leu Asp Gly Leu Val Gln Met Pro Ser Gly Cys Gly Glu
 965 970 975
 Gln Asn Met Val Leu Phe Ala Pro Ile Ile Tyr Val Leu Gln Tyr Leu
 980 985 990
 Glu Lys Ala Gly Leu Leu Thr Glu Glu Ile Arg Ser Arg Ala Val Gly
 995 1000 1005
 Phe Leu Glu Ile Gly Tyr Gln Lys Glu Leu Met Tyr Lys His Ser Asn
 1010 1015 1020
 Gly Ser Tyr Ser Ala Phe Gly Glu Arg Asp Gly Asn Gly Asn Thr Trp
 1025 1030 1035 1040
 Leu Thr Ala Phe Val Thr Lys Cys Phe Gly Gln Ala Gln Lys Phe Ile
 1045 1050 1055
 Phe Ile Asp Pro Lys Asn Ile Gln Asp Ala Leu Lys Trp Met Ala Gly
 1060 1065 1070
 Asn Gln Leu Pro Ser Gly Cys Tyr Ala Asn Val Gly Asn Leu Leu His
 1075 1080 1085
 Thr Ala Met Lys Gly Gly Val Asp Asp Glu Val Ser Leu Thr Ala Tyr
 1090 1095 1100
 Val Thr Ala Ala Leu Leu Glu Met Gly Lys Asp Val Asp Asp Pro Met
 1105 1110 1115 1120
 Val Ser Gln Gly Leu Arg Cys Leu Lys Asn Ser Ala Thr Ser Thr Thr
 1125 1130 1135
 Asn Leu Tyr Thr Gln Ala Leu Leu Ala Tyr Ile Phe Ser Leu Ala Gly
 1140 1145 1150
 Glu Met Asp Ile Arg Asn Ile Leu Leu Lys Gln Leu Asp Gln Gln Ala
 1155 1160 1165
 Ile Ile Ser Gly Glu Ser Ile Tyr Trp Ser Gln Lys Pro Thr Pro Ser
 1170 1175 1180
 Ser Asn Ala Ser Pro Trp Ser Glu Pro Ala Ala Val Asp Val Glu Leu
 1185 1190 1195 1200
 Thr Ala Tyr Ala Leu Leu Ala Gln Leu Thr Lys Pro Ser Leu Thr Gln
 1205 1210 1215
 Lys Glu Ile Ala Lys Ala Thr Ser Ile Val Ala Trp Leu Ala Lys Gln
 1220 1225 1230

His Asn Ala Tyr Gly Gly Phe Ser Ser Thr Gln Asp Thr Val Val Ala
 1235 1240 1245
 Leu Gln Ala Leu Ala Lys Tyr Ala Thr Thr Ala Tyr Met Pro Ser Glu
 1250 1255 1260
 Glu Ile Asn Leu Val Val Lys Ser Thr Glu Asn Phe Gln Arg Thr Phe
 1265 1270 1275 1280
 Asn Ile Gln Ser Val Asn Arg Leu Val Phe Gln Gln Asp Thr Leu Pro
 1285 1290 1295
 Asn Val Pro Gly Met Tyr Thr Leu Glu Ala Ser Gly Gln Gly Cys Val
 1300 1305 1310
 Tyr Val Gln Thr Val Leu Arg Tyr Asn Ile Leu Pro Pro Thr Asn Met
 1315 1320 1325
 Lys Thr Phe Ser Leu Ser Val Glu Ile Gly Lys Ala Arg Cys Glu Gln
 1330 1335 1340
 Pro Thr Ser Pro Arg Ser Leu Thr Leu Thr Ile His Thr Ser Tyr Val
 1345 1350 1355 1360
 Gly Ser Arg Ser Ser Ser Asn Met Ala Ile Val Glu Val Lys Met Leu
 1365 1370 1375
 Ser Gly Phe Ser Pro Met Glu Gly Thr Asn Gln Leu Leu Leu Gln Gln
 1380 1385 1390
 Pro Leu Val Lys Lys Val Glu Phe Gly Thr Asp Thr Leu Asn Ile Tyr
 1395 1400 1405
 Leu Asp Glu Leu Ile Lys Asn Thr Gln Thr Tyr Thr Phe Thr Ile Ser
 1410 1415 1420
 Gln Ser Val Leu Val Thr Asn Leu Lys Pro Ala Thr Ile Lys Val Tyr
 1425 1430 1435 1440
 Asp Tyr Tyr Leu Pro Asp Glu Gln Ala Thr Ile Gln Tyr Ser Asp Pro
 1445 1450 1455

Cys Glu

<210> 81

<211> 1458

<212> PRT

<213> Homo sapiens

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<222> (346)..(346)

<223> Wherein Xaa may be any naturally occurring amino acid

<400> 81

Met Trp Ala Gln Leu Leu Leu Gly Met Leu Ala Leu Ser Pro Ala Ile
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Ala Glu Glu Leu Pro Asn Tyr Leu Val Thr Leu Pro Ala Arg Leu Asn
 20 25 30

Phe Pro Ser Val Gln Lys Val Cys Leu Asp Leu Ser Pro Gly Tyr Ser
 182

35					40					45								
Asp	Val	Lys	Phe	Thr	Val	Thr	Leu	Glu	Thr	Lys	Asp	Lys	Thr	Gln	Lys			
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Leu	Leu	Glu	Tyr	Ser	Gly	Leu	Lys	Lys	Arg	His	Leu	His	Cys	Ile	Ser			
65					70					75					80			
Phe	Leu	Val	Pro	Pro	Pro	Ala	Gly	Gly	Thr	Glu	Glu	Val	Ala	Thr	Ile			
					85					90					95			
Arg	Val	Ser	Gly	Val	Gly	Asn	Asn	Ile	Ser	Phe	Glu	Glu	Lys	Lys	Lys			
					100					105					110			
Val	Leu	Ile	Gln	Arg	Gln	Gly	Asn	Gly	Thr	Phe	Val	Gln	Thr	Asp	Lys			
					115					120					125			
Pro	Leu	Tyr	Thr	Pro	Gly	Gln	Gln	Val	Tyr	Phe	Arg	Ile	Val	Thr	Met			
					130					135					140			
Asp	Ser	Asn	Phe	Val	Pro	Val	Asn	Asp	Lys	Tyr	Ser	Met	Val	Glu	Leu			
					145					150					155		160	
Gln	Asp	Pro	Asn	Ser	Asn	Arg	Ile	Ala	Gln	Trp	Leu	Glu	Val	Val	Pro			
					165					170					175			
Glu	Gln	Gly	Ile	Val	Asp	Leu	Ser	Phe	Gln	Leu	Ala	Pro	Glu	Ala	Met			
					180					185					190			
Leu	Gly	Thr	Tyr	Thr	Val	Ala	Val	Ala	Glu	Gly	Lys	Thr	Phe	Gly	Thr			
					195					200					205			
Phe	Ser	Val	Glu	Glu	Tyr	Val	Leu	Ser	Pro	Phe	Leu	Leu	Leu	Leu	Ser			
					210					215					220			
Ser	Val	Leu	Pro	Lys	Phe	Lys	Val	Glu	Val	Val	Glu	Pro	Lys	Glu	Leu			
					225					230					235		240	
Ser	Thr	Val	Gln	Glu	Ser	Phe	Leu	Val	Lys	Ile	Cys	Cys	Arg	Tyr	Thr			
					245					250					255			
Tyr	Gly	Lys	Pro	Met	Leu	Gly	Ala	Val	Gln	Val	Ser	Val	Cys	Gln	Lys			
					260					265					270			
Ala	Asn	Thr	Tyr	Trp	Tyr	Arg	Glu	Val	Glu	Arg	Glu	Gln	Leu	Pro	Asp			
					275					280					285			
Lys	Cys	Arg	Asn	Leu	Ser	Gly	Gln	Thr	Asp	Lys	Thr	Gly	Cys	Phe	Ser			
					290					295					300			
Ala	Pro	Val	Asp	Met	Ala	Thr	Phe	Asp	Leu	Ile	Gly	Tyr	Ala	Tyr	Ser			
					305					310					315		320	
His	Gln	Ile	Asn	Ile	Val	Ala	Thr	Val	Val	Glu	Glu	Gly	Thr	Gly	Val			
					325					330					335			
Glu	Ala	Asn	Ala	Thr	Gln	Asn	Ile	Tyr	Xaa	Ser	Pro	Gln	Met	Gly	Ser			
					340					345					350			
Met	Thr	Phe	Glu	Asp	Thr	Ser	Asn	Phe	Tyr	His	Pro	Asn	Phe	Pro	Phe			
					355					360					365			
Ser	Gly	Lys	Met	Leu	Leu	Lys	Phe	Pro	Gln	Gly	Gly	Val	Leu	Pro	Cys			
																183		

370					375					380					
Lys	Asn	His	Leu	Val	Phe	Leu	Val	Ile	Tyr	Gly	Thr	Asn	Gly	Thr	Phe
385					390					395					400
Asn	Gln	Thr	Leu	Val	Thr	Asp	Asn	Asn	Gly	Leu	Ala	Pro	Phe	Thr	Leu
				405					410					415	
Glu	Thr	Ser	Gly	Trp	Asn	Gly	Thr	Asp	Val	Ser	Leu	Glu	Gly	Lys	Phe
			420					425					430		
Gln	Met	Glu	Asp	Leu	Val	Tyr	Asn	Pro	Glu	Gln	Val	Pro	Arg	Tyr	Tyr
		435					440					445			
Gln	Asn	Ala	Tyr	Leu	His	Leu	Arg	Pro	Phe	Tyr	Ser	Thr	Thr	Arg	Ser
	450					455					460				
Phe	Leu	Gly	Ile	His	Arg	Leu	Asn	Gly	Pro	Leu	Lys	Cys	Gly	Gln	Pro
465					470					475					480
Gln	Glu	Val	Leu	Val	Asp	Tyr	Tyr	Ile	Asp	Pro	Ala	Asp	Ala	Ser	Pro
				485					490					495	
Asp	Gln	Glu	Ile	Ser	Phe	Ser	Tyr	Tyr	Leu	Ile	Gly	Lys	Gly	Ser	Leu
			500					505					510		
Val	Met	Glu	Gly	Gln	Lys	His	Leu	Asn	Ser	Lys	Lys	Lys	Gly	Leu	Lys
	515						520					525			
Ala	Ser	Phe	Ser	Leu	Ser	Leu	Thr	Phe	Thr	Ser	Arg	Leu	Ala	Pro	Asp
	530					535					540				
Pro	Ser	Leu	Val	Ile	Tyr	Ala	Ile	Phe	Pro	Ser	Gly	Gly	Val	Val	Ala
545					550					555					560
Asp	Lys	Ile	Gln	Phe	Ser	Val	Glu	Met	Cys	Phe	Asp	Asn	Gln	Gln	Leu
				565					570					575	
Pro	Gly	Ala	Glu	Val	Glu	Leu	Gln	Leu	Gln	Ala	Ala	Pro	Gly	Ser	Leu
			580				585						590		
Cys	Ala	Leu	Arg	Ala	Val	Asp	Glu	Ser	Val	Leu	Leu	Leu	Arg	Pro	Asp
	595						600					605			
Arg	Glu	Leu	Ser	Asn	Arg	Ser	Val	Tyr	Gly	Met	Phe	Pro	Phe	Trp	Tyr
	610					615					620				
Gly	His	Tyr	Pro	Tyr	Gln	Val	Ala	Glu	Tyr	Asp	Gln	Cys	Pro	Val	Ser
625					630					635					640
Gly	Pro	Trp	Asp	Phe	Pro	Gln	Pro	Leu	Ile	Asp	Pro	Met	Pro	Gln	Gly
				645					650					655	
His	Ser	Ser	Gln	Arg	Ser	Ile	Ile	Trp	Arg	Pro	Ser	Phe	Ser	Glu	Gly
			660					665					670		
Thr	Asp	Leu	Phe	Ser	Phe	Phe	Arg	Asp	Val	Gly	Leu	Lys	Ile	Leu	Ser
		675					680					685			
Asn	Ala	Lys	Ile	Lys	Lys	Pro	Val	Asp	Cys	Ser	His	Arg	Ser	Pro	Glu
	690					695					700				
Tyr	Ser	Thr	Ala	Met	Gly	Gly	Gly	Gly	His	Pro	Glu	Ala	Phe	Glu	Ser
									184						

705					710					715					720
Ser	Thr	Pro	Leu	His	Gln	Ala	Glu	Asp	Ser	Gln	Val	Arg	Gln	Tyr	Phe
				725					730					735	
Pro	Glu	Thr	Trp	Leu	Trp	Asp	Leu	Phe	Pro	Ile	Gly	Asn	Ser	Gly	Lys
			740					745					750		
Glu	Ala	Val	His	Val	Thr	Val	Pro	Asp	Ala	Ile	Thr	Glu	Trp	Lys	Ala
		755					760					765			
Met	Ser	Phe	Cys	Thr	Ser	Gln	Ser	Arg	Gly	Phe	Gly	Leu	Ser	Pro	Thr
	770					775					780				
Val	Gly	Leu	Thr	Ala	Phe	Lys	Pro	Phe	Phe	Val	Asp	Leu	Thr	Leu	Pro
785					790					795					800
Tyr	Ser	Val	Val	Arg	Gly	Glu	Ser	Phe	Arg	Leu	Thr	Ala	Thr	Ile	Phe
				805					810					815	
Asn	Tyr	Leu	Lys	Asp	Cys	Ile	Arg	Val	Gln	Thr	Asp	Leu	Ala	Lys	Ser
			820					825					830		
His	Glu	Tyr	Gln	Leu	Glu	Ser	Trp	Ala	Asp	Ser	Gln	Thr	Ser	Ser	Cys
		835					840					845			
Leu	Cys	Ala	Asp	Asp	Ala	Lys	Thr	His	His	Trp	Asn	Ile	Thr	Ala	Val
	850					855					860				
Lys	Leu	Gly	His	Ile	Asn	Phe	Thr	Ile	Ser	Thr	Lys	Ile	Leu	Asp	Ser
865					870					875					880
Asn	Glu	Pro	Cys	Gly	Gly	Gln	Lys	Gly	Phe	Val	Pro	Gln	Lys	Gly	Arg
				885					890					895	
Ser	Asp	Thr	Leu	Ile	Lys	Pro	Val	Leu	Val	Lys	Pro	Glu	Gly	Val	Leu
			900					905					910		
Val	Glu	Lys	Thr	His	Ser	Ser	Leu	Leu	Cys	Pro	Lys	Gly	Gly	Lys	Val
		915					920					925			
Ala	Ser	Glu	Ser	Val	Ser	Leu	Glu	Leu	Pro	Val	Asp	Ile	Val	Pro	Asp
	930					935					940				
Ser	Thr	Lys	Ala	Tyr	Val	Thr	Val	Leu	Gly	Asp	Ile	Met	Gly	Thr	Ala
945					950					955					960
Leu	Gln	Asn	Leu	Asp	Gly	Leu	Val	Gln	Met	Pro	Ser	Gly	Cys	Gly	Glu
				965					970					975	
Gln	Asn	Met	Val	Leu	Phe	Ala	Pro	Ile	Ile	Tyr	Val	Leu	Gln	Tyr	Leu
			980					985					990		
Glu	Lys	Ala	Gly	Leu	Leu	Thr	Glu	Glu	Ile	Arg	Ser	Arg	Ala	Val	Gly
		995					1000					1005			
Phe	Leu	Glu	Ile	Gly	Tyr	Gln	Lys	Glu	Leu	Met	Tyr	Lys	His	Ser	Asn
	1010					1015					1020				
Gly	Ser	Tyr	Ser	Ala	Phe	Gly	Glu	Arg	Asp	Gly	Asn	Gly	Asn	Thr	Trp
1025					1030					1035					1040
Leu	Thr	Ala	Phe	Val	Thr	Lys	Cys	Phe	Gly	Gln	Ala	Gln	Lys	Phe	Ile
									185						

1045	1050	1055
Phe Ile Asp Pro Lys Asn Ile Gln Asp Ala Leu Lys Trp Met Ala Gly 1060	1065	1070
Asn Gln Leu Pro Ser Gly Cys Tyr Ala Asn Val Gly Asn Leu Leu His 1075	1080	1085
Thr Ala Met Lys Gly Gly Val Asp Asp Glu Val Ser Leu Thr Ala Tyr 1090	1095	1100
Val Thr Ala Ala Leu Leu Glu Met Gly Lys Asp Val Asp Asp Pro Met 1105	1110	1115
Val Ser Gln Gly Leu Arg Cys Leu Lys Asn Ser Ala Thr Ser Thr Thr 1125	1130	1135
Asn Leu Tyr Thr Gln Ala Leu Leu Ala Tyr Ile Phe Ser Leu Ala Gly 1140	1145	1150
Glu Met Asp Ile Arg Asn Ile Leu Leu Lys Gln Leu Asp Gln Gln Ala 1155	1160	1165
Ile Ile Ser Gly Glu Ser Ile Tyr Trp Ser Gln Lys Pro Thr Pro Ser 1170	1175	1180
Ser Asn Ala Ser Pro Trp Ser Glu Pro Ala Ala Val Asp Val Glu Leu 1185	1190	1195
Thr Ala Tyr Ala Leu Leu Ala Gln Leu Thr Lys Pro Ser Leu Thr Gln 1205	1210	1215
Lys Glu Ile Ala Lys Ala Thr Ser Ile Val Ala Trp Leu Ala Lys Gln 1220	1225	1230
His Asn Ala Tyr Gly Gly Phe Ser Ser Thr Gln Asp Thr Val Val Ala 1235	1240	1245
Leu Gln Ala Leu Ala Lys Tyr Ala Thr Thr Ala Tyr Met Pro Ser Glu 1250	1255	1260
Glu Ile Asn Leu Val Val Lys Ser Thr Glu Asn Phe Gln Arg Thr Phe 1265	1270	1275
Asn Ile Gln Ser Val Asn Arg Leu Val Phe Gln Gln Asp Thr Leu Pro 1285	1290	1295
Asn Val Pro Gly Met Tyr Thr Leu Glu Ala Ser Gly Gln Gly Cys Val 1300	1305	1310
Tyr Val Gln Thr Val Leu Arg Tyr Asn Ile Leu Pro Pro Thr Asn Met 1315	1320	1325
Lys Thr Phe Ser Leu Ser Val Glu Ile Gly Lys Ala Arg Cys Glu Gln 1330	1335	1340
Pro Thr Ser Pro Arg Ser Leu Thr Leu Thr Ile His Thr Ser Tyr Val 1345	1350	1355
Gly Ser Arg Ser Ser Ser Asn Met Ala Ile Val Glu Val Lys Met Leu 1365	1370	1375
Ser Gly Phe Ser Pro Met Glu Gly Thr Asn Gln Leu Leu Leu Gln Gln 186		

1380	1385	1390
Pro Leu Val Lys Lys Val Glu Phe Gly Thr Asp Thr Leu Asn Ile Tyr		
1395	1400	1405
Leu Asp Glu Leu Ile Lys Asn Thr Gln Thr Tyr Thr Phe Thr Ile Ser		
1410	1415	1420
Gln Ser Val Leu Val Thr Asn Leu Lys Pro Ala Thr Ile Lys Val Tyr		
1425	1430	1435
Asp Tyr Tyr Leu Pro Asp Glu Gln Ala Thr Ile Gln Tyr Ser Asp Pro		
1445	1450	1455

Cys Glu

<210> 82
 <211> 1458
 <212> PRT
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (346)..(346)
 <223> Wherein Xaa may be any naturally occurring amino acid

<400> 82
 Met Trp Ala Gln Leu Leu Leu Gly Met Leu Ala Leu Ser Pro Ala Ile
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 Ala Glu Glu Leu Pro Asn Tyr Leu Val Thr Leu Pro Ala Arg Leu Asn
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 Phe Pro Ser Val Gln Lys Val Cys Leu Asp Leu Ser Pro Gly Tyr Ser
 35 40 45
 Asp Val Lys Phe Thr Val Thr Leu Glu Thr Lys Asp Lys Thr Gln Lys
 50 55 60
 Leu Leu Glu Tyr Ser Gly Leu Lys Lys Arg His Leu His Cys Ile Ser
 65 70 75 80
 Phe Leu Val Pro Pro Pro Ala Gly Gly Thr Glu Glu Val Ala Thr Ile
 85 90 95
 Arg Val Ser Gly Val Gly Asn Asn Ile Ser Phe Glu Glu Lys Lys Lys
 100 105 110
 Val Leu Ile Gln Arg Gln Gly Asn Gly Thr Phe Val Gln Thr Asp Lys
 115 120 125
 Pro Leu Tyr Thr Pro Gly Gln Gln Val Tyr Phe Arg Ile Val Thr Met
 130 135 140
 Asp Ser Asn Phe Val Pro Val Asn Asp Lys Tyr Ser Met Val Glu Leu
 145 150 155 160
 Gln Asp Pro Asn Ser Asn Arg Ile Ala Gln Trp Leu Glu Val Val Pro
 165 170 175
 Glu Gln Gly Ile Val Asp Leu Ser Phe Gln Leu Ala Pro Glu Ala Met
 180 185 190
 187

Leu	Gly	Thr	Tyr	Thr	Val	Ala	Val	Ala	Glu	Gly	Lys	Thr	Phe	Gly	Thr	195	200	205
Phe	Ser	Val	Glu	Glu	Tyr	Val	Leu	Ser	Pro	Phe	Leu	Leu	Leu	Leu	Ser	210	215	220
Ser	Val	Leu	Pro	Lys	Phe	Lys	Val	Glu	Val	Val	Glu	Pro	Lys	Glu	Leu	225	230	235
Ser	Thr	Val	Gln	Glu	Ser	Phe	Leu	Val	Lys	Ile	Cys	Cys	Arg	Tyr	Thr	245	250	255
Tyr	Gly	Lys	Pro	Met	Leu	Gly	Ala	Val	Gln	Val	Ser	Val	Cys	Gln	Lys	260	265	270
Ala	Asn	Thr	Tyr	Trp	Tyr	Arg	Glu	Val	Glu	Arg	Glu	Gln	Leu	Pro	Asp	275	280	285
Lys	Cys	Arg	Asn	Leu	Ser	Gly	Gln	Thr	Asp	Lys	Thr	Gly	Cys	Phe	Ser	290	295	300
Ala	Pro	Val	Asp	Met	Ala	Thr	Phe	Asp	Leu	Ile	Gly	Tyr	Ala	Tyr	Ser	305	310	315
His	Gln	Ile	Asn	Ile	Val	Ala	Thr	Val	Val	Glu	Glu	Gly	Thr	Gly	Val	325	330	335
Glu	Ala	Asn	Ala	Thr	Gln	Asn	Ile	Tyr	Xaa	Ser	Pro	Gln	Met	Gly	Ser	340	345	350
Met	Thr	Phe	Glu	Asp	Thr	Ser	Asn	Phe	Tyr	His	Pro	Asn	Phe	Pro	Phe	355	360	365
Ser	Gly	Lys	Met	Leu	Leu	Lys	Phe	Pro	Gln	Gly	Gly	Val	Leu	Pro	Cys	370	375	380
Lys	Asn	His	Leu	Val	Phe	Leu	Val	Ile	Tyr	Gly	Thr	Asn	Gly	Thr	Phe	385	390	395
Asn	Gln	Thr	Leu	Val	Thr	Asp	Asn	Asn	Gly	Leu	Ala	Pro	Phe	Thr	Leu	405	410	415
Glu	Thr	Ser	Gly	Trp	Asn	Gly	Thr	Asp	Val	Ser	Leu	Glu	Gly	Lys	Phe	420	425	430
Gln	Met	Glu	Asp	Leu	Val	Tyr	Asn	Pro	Glu	Gln	Val	Pro	Arg	Tyr	Tyr	435	440	445
Gln	Asn	Ala	Tyr	Leu	His	Leu	Arg	Pro	Phe	Tyr	Ser	Thr	Thr	Arg	Ser	450	455	460
Phe	Leu	Gly	Ile	His	Arg	Leu	Asn	Gly	Pro	Leu	Lys	Cys	Gly	Gln	Pro	465	470	475
Gln	Glu	Val	Leu	Val	Asp	Tyr	Tyr	Ile	Asp	Pro	Ala	Asp	Ala	Ser	Pro	485	490	495
Asp	Gln	Glu	Ile	Ser	Phe	Ser	Tyr	Tyr	Leu	Ile	Gly	Lys	Gly	Ser	Leu	500	505	510
Val	Met	Glu	Gly	Gln	Lys	His	Leu	Asn	Ser	Lys	Lys	Lys	Gly	Leu	Lys	515	520	525

Ala	Ser	Phe	Ser	Leu	Ser	Leu	Thr	Phe	Thr	Ser	Arg	Leu	Ala	Pro	Asp		
530						535					540						
Pro	Ser	Leu	Val	Ile	Tyr	Ala	Ile	Phe	Pro	Ser	Gly	Gly	Val	Val	Ala		
545					550					555					560		
Asp	Lys	Ile	Gln	Phe	Ser	Val	Glu	Met	Cys	Phe	Asp	Asn	Gln	Gln	Leu		
				565					570					575			
Pro	Gly	Ala	Glu	Val	Glu	Leu	Gln	Leu	Gln	Ala	Ala	Pro	Gly	Ser	Leu		
			580					585					590				
Cys	Ala	Leu	Arg	Ala	Val	Asp	Glu	Ser	Val	Leu	Leu	Leu	Arg	Pro	Asp		
		595					600					605					
Arg	Glu	Leu	Ser	Asn	Arg	Ser	Val	Tyr	Gly	Met	Phe	Pro	Phe	Trp	Tyr		
		610				615					620						
Gly	His	Tyr	Pro	Tyr	Gln	Val	Ala	Glu	Tyr	Asp	Gln	Cys	Pro	Val	Ser		
625					630					635					640		
Gly	Pro	Trp	Asp	Phe	Pro	Gln	Pro	Leu	Ile	Asp	Pro	Met	Pro	Gln	Gly		
				645					650					655			
His	Ser	Ser	Gln	Arg	Ser	Ile	Ile	Trp	Arg	Pro	Ser	Phe	Ser	Glu	Gly		
			660					665						670			
Thr	Asp	Leu	Phe	Ser	Phe	Phe	Arg	Asp	Val	Gly	Leu	Lys	Ile	Leu	Ser		
		675					680					685					
Asn	Ala	Lys	Ile	Lys	Lys	Pro	Val	Asp	Cys	Ser	His	Arg	Ser	Pro	Glu		
		690				695					700						
Tyr	Ser	Thr	Ala	Met	Gly	Gly	Gly	Gly	His	Pro	Glu	Ala	Phe	Glu	Ser		
705					710					715					720		
Ser	Thr	Pro	Leu	His	Gln	Ala	Glu	Asp	Ser	Gln	Val	Arg	Gln	Tyr	Phe		
				725					730					735			
Pro	Glu	Thr	Trp	Leu	Trp	Asp	Leu	Phe	Pro	Ile	Gly	Asn	Ser	Gly	Lys		
			740					745					750				
Glu	Ala	Val	His	Val	Thr	Val	Pro	Asp	Ala	Ile	Thr	Glu	Trp	Lys	Ala		
		755					760					765					
Met	Ser	Phe	Cys	Thr	Ser	Gln	Ser	Arg	Gly	Phe	Gly	Leu	Ser	Pro	Thr		
		770				775					780						
Val	Gly	Leu	Thr	Ala	Phe	Lys	Pro	Phe	Phe	Val	Asp	Leu	Thr	Leu	Pro		
785					790					795					800		
Tyr	Ser	Val	Val	Arg	Gly	Glu	Ser	Phe	Arg	Leu	Thr	Ala	Thr	Ile	Phe		
				805					810					815			
Asn	Tyr	Leu	Lys	Asp	Cys	Ile	Arg	Val	Gln	Thr	Asp	Leu	Ala	Lys	Ser		
			820					825					830				
His	Glu	Tyr	Gln	Leu	Glu	Ser	Trp	Ala	Asp	Ser	Gln	Thr	Ser	Ser	Cys		
		835					840					845					
Leu	Cys	Ala	Asp	Asp	Ala	Lys	Thr	His	His	Trp	Asn	Ile	Thr	Ala	Val		
	850					855					860						

Lys Leu Gly His Ile Asn Phe Thr Ile Ser Thr Lys Ile Leu Asp Ser
 865 870 875 880
 Asn Glu Pro Cys Gly Gly Gln Lys Gly Phe Val Pro Gln Lys Gly Arg
 885 890 895
 Ser Asp Thr Leu Ile Lys Pro Val Leu Val Lys Pro Glu Gly Val Leu
 900 905 910
 Val Glu Lys Thr His Ser Ser Leu Leu Cys Pro Lys Gly Gly Lys Val
 915 920 925
 Ala Ser Glu Ser Val Ser Leu Glu Leu Pro Val Asp Ile Val Pro Asp
 930 935 940
 Ser Thr Lys Ala Tyr Val Thr Val Leu Gly Asp Ile Met Gly Thr Ala
 945 950 955 960
 Leu Gln Asn Leu Asp Gly Leu Val Gln Met Pro Ser Gly Cys Gly Glu
 965 970 975
 Gln Asn Met Val Leu Phe Ala Pro Ile Ile Tyr Val Leu Gln Tyr Leu
 980 985 990
 Glu Lys Ala Gly Leu Leu Thr Glu Glu Ile Arg Ser Arg Ala Val Gly
 995 1000 1005
 Phe Leu Glu Ile Gly Tyr Gln Lys Glu Leu Met Tyr Lys His Ser Asn
 1010 1015 1020
 Gly Ser Tyr Ser Ala Phe Gly Glu Arg Asp Gly Asn Gly Asn Thr Trp
 1025 1030 1035 1040
 Leu Thr Ala Phe Val Thr Lys Cys Phe Gly Gln Ala Gln Lys Phe Ile
 1045 1050 1055
 Phe Ile Asp Pro Lys Asn Ile Gln Asp Ala Leu Lys Trp Met Ala Gly
 1060 1065 1070
 Asn Gln Leu Pro Ser Gly Cys Tyr Ala Asn Val Gly Asn Leu Leu His
 1075 1080 1085
 Thr Ala Met Lys Gly Gly Val Asp Asp Glu Val Ser Leu Thr Ala Tyr
 1090 1095 1100
 Val Thr Ala Ala Leu Leu Glu Met Gly Lys Asp Val Asp Asp Pro Met
 1105 1110 1115 1120
 Val Ser Gln Gly Leu Arg Cys Leu Lys Asn Ser Ala Thr Ser Thr Thr
 1125 1130 1135
 Asn Leu Tyr Thr Gln Ala Leu Leu Ala Tyr Ile Phe Ser Leu Ala Gly
 1140 1145 1150
 Glu Met Asp Ile Arg Asn Ile Leu Leu Lys Gln Leu Asp Gln Gln Ala
 1155 1160 1165
 Ile Ile Ser Gly Glu Ser Ile Tyr Trp Ser Gln Lys Pro Thr Pro Ser
 1170 1175 1180
 Ser Asn Ala Ser Pro Trp Ser Glu Pro Ala Ala Val Asp Val Glu Leu
 1185 1190 1195 1200
 190

Thr Ala Tyr Ala Leu Leu Ala Gln Leu Thr Lys Pro Ser Leu Thr Gln
 1205 1210 1215
 Lys Glu Ile Ala Lys Ala Thr Ser Ile Val Ala Trp Leu Ala Lys Gln
 1220 1225 1230
 His Asn Ala Tyr Gly Gly Phe Ser Ser Thr Gln Asp Thr Val Val Ala
 1235 1240 1245
 Leu Gln Ala Leu Ala Lys Tyr Ala Thr Thr Ala Tyr Met Pro Ser Glu
 1250 1255 1260
 Glu Ile Asn Leu Val Val Lys Ser Thr Glu Asn Phe Gln Arg Thr Phe
 1265 1270 1275 1280
 Asn Ile Gln Ser Val Asn Arg Leu Val Phe Gln Gln Asp Thr Leu Pro
 1285 1290 1295
 Asn Val Pro Gly Met Tyr Thr Leu Glu Ala Ser Gly Gln Gly Cys Val
 1300 1305 1310
 Tyr Val Gln Thr Val Leu Arg Tyr Asn Ile Leu Pro Pro Thr Asn Met
 1315 1320 1325
 Lys Thr Phe Ser Leu Ser Val Glu Ile Gly Lys Ala Arg Cys Glu Gln
 1330 1335 1340
 Pro Thr Ser Pro Arg Ser Leu Thr Leu Thr Ile His Thr Ser Tyr Val
 1345 1350 1355 1360
 Gly Ser Arg Ser Ser Ser Asn Met Ala Ile Val Glu Val Lys Met Leu
 1365 1370 1375
 Ser Gly Phe Ser Pro Met Glu Gly Thr Asn Gln Leu Leu Leu Gln Gln
 1380 1385 1390
 Pro Leu Val Lys Lys Val Glu Phe Gly Thr Asp Thr Leu Asn Ile Tyr
 1395 1400 1405
 Leu Asp Glu Leu Ile Lys Asn Thr Gln Thr Tyr Thr Phe Thr Ile Ser
 1410 1415 1420
 Gln Ser Val Leu Val Thr Asn Leu Lys Pro Ala Thr Ile Lys Val Tyr
 1425 1430 1435 1440
 Asp Tyr Tyr Leu Pro Asp Glu Gln Ala Thr Ile Gln Tyr Ser Asp Pro
 1445 1450 1455

Cys Glu

<210> 83
 <211> 324
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(321)

<400> 83
 tct gga aag tcc ttc aaa gct gga gtc tgt cct cct aag aaa tct gcc 48
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Ser	Gly	Lys	Ser	Phe	Lys	Ala	Gly	Val	Cys	Pro	Pro	Lys	Lys	Ser	Ala	
1				5					10					15		
cag	tgc	ctt	aga	tac	aag	aaa	cct	gag	tgc	cag	agt	gac	tgg	cag	tgt	96
Gln	Cys	Leu	Arg	Tyr	Lys	Lys	Pro	Glu	Cys	Gln	Ser	Asp	Trp	Gln	Cys	
			20					25					30			
cca	ggg	aag	aag	aga	tgt	tgt	cct	gac	act	tgt	ggc	atc	aaa	tgc	ctg	144
Pro	Gly	Lys	Lys	Arg	Cys	Cys	Pro	Asp	Thr	Cys	Gly	Ile	Lys	Cys	Leu	
		35					40					45				
gat	cct	gtt	gac	acc	cca	aac	cca	aca	agg	agg	aag	cct	ggg	aag	tac	192
Asp	Pro	Val	Asp	Thr	Pro	Asn	Pro	Thr	Arg	Arg	Lys	Pro	Gly	Lys	Tyr	
		50				55					60					
cca	gtg	act	tat	ggc	caa	tgt	ttg	atg	ctt	aac	ccc	ccc	aat	ttc	tgt	240
Pro	Val	Thr	Tyr	Gly	Gln	Cys	Leu	Met	Leu	Asn	Pro	Pro	Asn	Phe	Cys	
	65				70				75						80	
gag	atg	gat	ggc	cag	tgc	aag	cgt	gac	ttg	aag	tgt	tgc	atg	ggc	atg	288
Glu	Met	Asp	Gly	Gln	Cys	Lys	Arg	Asp	Leu	Lys	Cys	Cys	Met	Gly	Met	
				85				90						95		
tgt	ggg	aaa	tcc	tgc	gtt	tcc	cct	gtg	aaa	gct	tag					324
Cys	Gly	Lys	Ser	Cys	Val	Ser	Pro	Val	Lys	Ala						
			100					105								

<210> 84
 <211> 107
 <212> PRT
 <213> Homo sapiens

Ser	Gly	Lys	Ser	Phe	Lys	Ala	Gly	Val	Cys	Pro	Pro	Lys	Lys	Ser	Ala	
1				5					10					15		
Gln	Cys	Leu	Arg	Tyr	Lys	Lys	Pro	Glu	Cys	Gln	Ser	Asp	Trp	Gln	Cys	
			20					25					30			
Pro	Gly	Lys	Lys	Arg	Cys	Cys	Pro	Asp	Thr	Cys	Gly	Ile	Lys	Cys	Leu	
		35					40					45				
Asp	Pro	Val	Asp	Thr	Pro	Asn	Pro	Thr	Arg	Arg	Lys	Pro	Gly	Lys	Tyr	
		50				55					60					
Pro	Val	Thr	Tyr	Gly	Gln	Cys	Leu	Met	Leu	Asn	Pro	Pro	Asn	Phe	Cys	
	65				70				75						80	
Glu	Met	Asp	Gly	Gln	Cys	Lys	Arg	Asp	Leu	Lys	Cys	Cys	Met	Gly	Met	
				85				90						95		
Cys	Gly	Lys	Ser	Cys	Val	Ser	Pro	Val	Lys	Ala						
			100					105								

<210> 85
 <211> 594
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (19)..(414)

<400> 85
gtcactcctg ccttcacc atg aag tcc agc ggc ctc tcc ccc ttc ctg gtg 51
Met Lys Ser Ser Gly Leu Ser Pro Phe Leu Val
1 5 10

ctg ctt gcc ctg gga act ctg gca cct tgg gct gtg gaa ggc tct gga 99
Leu Leu Ala Leu Gly Thr Leu Ala Pro Trp Ala Val Glu Gly Ser Gly
15 20 25

aag tcc ttc aaa gct gga gtc tgt cct cct aag aaa tct gcc cag tgc 147
Lys Ser Phe Lys Ala Gly Val Cys Pro Pro Lys Lys Ser Ala Ala Gln Cys
30 35 40

ctt aga tac aag aaa cct gag tgc cag agt gac tgg cag tgt cca ggg 195
Leu Arg Tyr Lys Lys Pro Glu Cys Gln Ser Asp Trp Gln Cys Pro Gly
45 50 55

aag aag aga tgt tgt cct gac act tgt ggc atc aaa tgc ctg gat cct 243
Lys Lys Arg Cys Cys Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro
60 65 70 75

gtt gac acc cca aac cca aca agg agg aag cct ggg aag tgc cca gtg 291
Val Asp Thr Pro Asn Pro Thr Arg Arg Lys Pro Gly Lys Cys Pro Val
80 85 90

act tat ggc caa tgt ttg atg ctt aac ccc ccc aat ttc tgt gag atg 339
Thr Tyr Gly Gln Cys Leu Met Leu Asn Pro Pro Asn Phe Cys Glu Met
95 100 105

gat ggc cag tgc aag cgt gac ttg aag tgt tgc atg ggc atg tgt ggg 387
Asp Gly Gln Cys Lys Arg Asp Leu Lys Cys Cys Met Gly Met Cys Gly
110 115 120

aaa tcc tgc gtt tcc cct gtg aaa gct tgattcctgc catatggagg 434
Lys Ser Cys Val Ser Pro Val Lys Ala
125 130

aggctctgga gtcctgctct gtgtggtcca ggtcctttcc accctgagac ttggctccac 494

cactgatatc ctcttttggg gaaaggcttg gcacacagca ggctttcaag aagtgccagt 554

tgatcaatga ataaataaac gagcctatct ctctttgac 594

<210> 86
<211> 132
<212> PRT
<213> Homo sapiens

<400> 86
Met Lys Ser Ser Gly Leu Ser Pro Phe Leu Val Leu Leu Ala Leu Gly
1 5 10 15

Thr Leu Ala Pro Trp Ala Val Glu Gly Ser Gly Lys Ser Phe Lys Ala
20 25 30

Gly Val Cys Pro Pro Lys Lys Ser Ala Gln Cys Leu Arg Tyr Lys Lys
35 40 45

Pro Glu Cys Gln Ser Asp Trp Gln Cys Pro Gly Lys Lys Arg Cys Cys
50 55 60

Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro Val Asp Thr Pro Asn
65 70 75 80

193

Pro Thr Arg Arg Lys Pro Gly Lys Cys Pro Val Thr Tyr Gly Gln Cys
85 90 95

Leu Met Leu Asn Pro Pro Asn Phe Cys Glu Met Asp Gly Gln Cys Lys
100 105 110

Arg Asp Leu Lys Cys Cys Met Gly Met Cys Gly Lys Ser Cys Val Ser
115 120 125

Pro Val Lys Ala
130

<210> 87
<211> 594
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (19) .. (414)

<400> 87
gtcactcctg ccttcacc atg aag tcc agc ggc ctc ttc ccc ttc ctg gtg 51
Met Lys Ser Ser Gly Leu Phe Pro Phe Leu Val
1 5 10

ctg ctt gcc ctg gga act ctg gca cct tgg gct gtg gaa ggc tct gga 99
Leu Leu Ala Leu Gly Thr Leu Ala Pro Trp Ala Val Glu Gly Ser Gly
15 20 25

aag tcc ttc aaa gct gga gtc tgt cct cct aag aaa tct gcc cag tgc 147
Lys Ser Phe Lys Ala Gly Val Cys Pro Pro Lys Lys Ser Ala Gln Cys
30 35 40

ctt aga tac aag aaa cct gag cgc cag agt gac tgg cag tgt cca ggg 195
Leu Arg Tyr Lys Lys Pro Glu Arg Gln Ser Asp Trp Gln Cys Pro Gly
45 50 55

aag aag aga tgt tgt cct gac act tgt ggc atc aaa tgc ctg gat cct 243
Lys Lys Arg Cys Cys Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro
60 65 70 75

gtt gac acc cca aac cca aca agg agg aag cct ggg aag tgc cca gtg 291
Val Asp Thr Pro Asn Pro Thr Arg Arg Lys Pro Gly Lys Cys Pro Val
80 85 90

act tat ggc caa tgt ttg atg ctt aac ccc ccc aat ttc tgt gag atg 339
Thr Tyr Gly Gln Cys Leu Met Leu Asn Pro Pro Asn Phe Cys Glu Met
95 100 105

gat ggc cag tgc aag cgt gac ttg aag tgt tgc atg ggc atg tgt ggg 387
Asp Gly Gln Cys Lys Arg Asp Leu Lys Cys Cys Met Gly Met Cys Gly
110 115 120

aaa tcc tgc gtt tcc cct gtg aaa gct tgattcctgc catatggagg 434
Lys Ser Cys Val Ser Pro Val Lys Ala
125 130

aggctctgga gtctgtctct gtgtggtcca ggtcctttcc accctgagac ttggtctccac 494

cactgatatc ctcttttggg gaaaggcttg gcacacagca ggctttcaag aagtgccagt 554

tgatcaatga ataaataaac gagcctatatt ctctttgcac

594

<210> 88

<211> 132

<212> PRT

<213> Homo sapiens

<400> 88

Met Lys Ser Ser Gly Leu Phe Pro Phe Leu Val Leu Leu Ala Leu Gly
1 5 10 15

Thr Leu Ala Pro Trp Ala Val Glu Gly Ser Gly Lys Ser Phe Lys Ala
20 25 30

Gly Val Cys Pro Pro Lys Lys Ser Ala Gln Cys Leu Arg Tyr Lys Lys
35 40 45

Pro Glu Arg Gln Ser Asp Trp Gln Cys Pro Gly Lys Lys Arg Cys Cys
50 55 60

Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro Val Asp Thr Pro Asn
65 70 75 80

Pro Thr Arg Arg Lys Pro Gly Lys Cys Pro Val Thr Tyr Gly Gln Cys
85 90 95

Leu Met Leu Asn Pro Pro Asn Phe Cys Glu Met Asp Gly Gln Cys Lys
100 105 110

Arg Asp Leu Lys Cys Cys Met Gly Met Cys Gly Lys Ser Cys Val Ser
115 120 125

Pro Val Lys Ala
130

<210> 89

<211> 594

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (19)..(414)

<400> 89

gtcactcctg ccttcacc atg aag tcc agc ggc ctc ttc ccc ttc ctg gtg 51
Met Lys Ser Ser Gly Leu Phe Pro Phe Leu Val
1 5 10

ccg ctt gcc ctg gga act ctg gca cct tgg gct gtg gaa ggc tct gga 99
Pro Leu Ala Leu Gly Thr Leu Ala Pro Trp Ala Val Glu Gly Ser Gly
15 20 25

aag tcc ttc aaa gct gga gtc tgt cct cct aag aaa tct gcc cag tgc 147
Lys Ser Phe Lys Ala Gly Val Cys Pro Pro Lys Lys Ser Ala Gln Cys
30 35 40

ctt aga tac aag aaa cct gag tgc cag agt gac tgg cag tgt cca ggg 195
Leu Arg Tyr Lys Lys Pro Glu Cys Gln Ser Asp Trp Gln Cys Pro Gly
45 50 55

aag aag aga tgt tgt cct gac act tgt ggc atc aaa tgc ctg gat cct 243
Lys Lys Arg Cys Cys Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro
195

60	65	70	75	
gtt gac acc cca aac cca aca agg agg aag cct ggg aag tgc cca gtg				291
Val Asp Thr Pro Asn Pro Thr Arg Arg Lys Pro Gly Lys Cys Pro Val				
	80	85	90	
act tat ggc caa tgt ttg atg ctt aac ccc ccc aat ttc tgt gag atg				339
Thr Tyr Gly Gln Cys Leu Met Leu Asn Pro Pro Asn Phe Cys Glu Met				
	95	100	105	
gat ggc cag tgc aag cgt gac ttg aag tgt tgc atg ggc atg tgt ggg				387
Asp Gly Gln Cys Lys Arg Asp Leu Lys Cys Cys Met Gly Met Cys Gly				
	110	115	120	
aaa tcc tgc gtt tcc cct gtg aaa gct tgattcctgc catatggagg				434
Lys Ser Cys Val Ser Pro Val Lys Ala				
	125	130		
aggctctgga gtctgtctct gtgtgggtcca ggtcctttcc accctgagac ttggctccac				494
cactgatatc ctcttttggg gaaaggcttg gcacacagca ggctttcaag aagtgccagt				554
tgatcaatga ataaataaac gagcctatct ctctttgcac				594
<210> 90				
<211> 132				
<212> PRT				
<213> Homo sapiens				
<400> 90				
Met Lys Ser Ser Gly Leu Phe Pro Phe Leu Val Pro Leu Ala Leu Gly				
1 5 10 15				
Thr Leu Ala Pro Trp Ala Val Glu Gly Ser Gly Lys Ser Phe Lys Ala				
20 25 30				
Gly Val Cys Pro Pro Lys Lys Ser Ala Gln Cys Leu Arg Tyr Lys Lys				
35 40 45				
Pro Glu Cys Gln Ser Asp Trp Gln Cys Pro Gly Lys Lys Arg Cys Cys				
50 55 60				
Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro Val Asp Thr Pro Asn				
65 70 75 80				
Pro Thr Arg Arg Lys Pro Gly Lys Cys Pro Val Thr Tyr Gly Gln Cys				
85 90 95				
Leu Met Leu Asn Pro Pro Asn Phe Cys Glu Met Asp Gly Gln Cys Lys				
100 105 110				
Arg Asp Leu Lys Cys Cys Met Gly Met Cys Gly Lys Ser Cys Val Ser				
115 120 125				
Pro Val Lys Ala				
130				
<210> 91				
<211> 594				
<212> DNA				
<213> Homo sapiens				
<220>				

<221> CDS

<222> (19)..(414)

<400> 91

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gtcactcctg ccttcacc atg aag tcc agc ggc ctc ttc ccc ttc ctg gtg      51
                Met Lys Ser Ser Gly Leu Phe Pro Phe Leu Val
                  1                    5                  10

ctg ctt gcc ctg gga act ctg gca cct tgg gct gtg gaa ggc tct gga      99
Leu Leu Ala Leu Gly Thr Leu Ala Pro Trp Ala Val Glu Gly Ser Gly
                15                    20                  25

aag tcc ttc aaa gct gga gtc tgt cct cct aag aaa tct gcc cag tgc     147
Lys Ser Phe Lys Ala Gly Val Cys Pro Pro Lys Lys Ser Ala Gln Cys
                30                    35                  40

ctt aga tac aag aaa cct gag tgc cag agt gac tgg cag tgt cca ggg     195
Leu Arg Tyr Lys Lys Pro Glu Cys Gln Ser Asp Trp Gln Cys Pro Gly
                45                    50                  55

aag aag aga tgt tgt cct gac act tgt ggc atc aaa tgc ctg gat cct     243
Lys Lys Arg Cys Cys Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro
                60                    65                  70                  75

gtt gac acc cca aac cca aca agg agg aag cct ggg aag tgc cca gtg     291
Val Asp Thr Pro Asn Pro Thr Arg Arg Lys Pro Gly Lys Cys Pro Val
                80                    85                  90

act tat ggc caa tgt tcg atg ctt aac ccc ccc aat ttc tgt gag atg     339
Thr Tyr Gly Gln Cys Ser Met Leu Asn Pro Pro Asn Phe Cys Glu Met
                95                    100                  105

gat ggc cag tgc aag cgt gac ttg aag tgt tgc atg ggc atg tgt ggg     387
Asp Gly Gln Cys Lys Arg Asp Leu Lys Cys Cys Met Gly Met Cys Gly
                110                    115                  120

aaa tcc tgc gtt tcc cct gtg aaa gct tgattcctgc catatggagg          434
Lys Ser Cys Val Ser Pro Val Lys Ala
                125                    130

aggctctgga gtctgtctct gtgtgggtcca ggtcctttcc accctgagac ttggctccac 494

cactgatatc ctcttttggg gaaaggcttg gcacacagca ggctttcaag aagtgccagt 554

tgatcaatga ataaataaac gagcctatatt ctctttgcac                      594
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<210> 92

<211> 132

<212> PRT

<213> Homo sapiens

<400> 92

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Met Lys Ser Ser Gly Leu Phe Pro Phe Leu Val Leu Leu Ala Leu Gly
  1                    5                  10                  15

Thr Leu Ala Pro Trp Ala Val Glu Gly Ser Gly Lys Ser Phe Lys Ala
  20                    25                  30

Gly Val Cys Pro Pro Lys Lys Ser Ala Gln Cys Leu Arg Tyr Lys Lys
  35                    40                  45

Pro Glu Cys Gln Ser Asp Trp Gln Cys Pro Gly Lys Lys Arg Cys Cys
  50                    55                  60
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Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro Val Asp Thr Pro Asn
65 70 75 80

Pro Thr Arg Arg Lys Pro Gly Lys Cys Pro Val Thr Tyr Gly Gln Cys
85 90 95

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Pro Val Lys Ala
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Leu Leu Ala Leu Gly Thr Leu Ala Pro Trp Ala Val Glu Gly Ser Gly
15 20 25

aag tcc ttc aaa gct gga gtc tgt cct cct aag aaa tct gcc cag tgc 147
Lys Ser Phe Lys Ala Gly Val Cys Pro Pro Lys Lys Ser Ala Gln Cys
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ctt aga tac aag aaa cct gag tgc cag agt gac tgg cag tgt cca ggg 195
Leu Arg Tyr Lys Lys Pro Glu Cys Gln Ser Asp Trp Gln Cys Pro Gly
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Lys Lys Arg Cys Cys Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro
60 65 70 75

gtt gac acc cca aac cca aca agg agg aag cct ggg aag tgc cca gtg 291
Val Asp Thr Pro Asn Pro Thr Arg Arg Lys Pro Gly Lys Cys Pro Val
80 85 90

act tat ggc caa tgt ttg atg ctt aac ccc ccc aat ttc tgt gag atg 339
Thr Tyr Gly Gln Cys Leu Met Leu Asn Pro Pro Asn Phe Cys Glu Met
95 100 105

gat ggc cag tgc aag cgt gac ttg aag tgt tgc atg ggc atg tgt ggg 387
Asp Gly Gln Cys Lys Arg Asp Leu Lys Cys Cys Met Gly Met Cys Gly
110 115 120

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Lys Ser Arg Val Ser Pro Val Lys Ala
125 130

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35 40 45

Pro Glu Cys Gln Ser Asp Trp Gln Cys Pro Gly Lys Lys Arg Cys Cys
50 55 60

Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro Val Asp Thr Pro Asn
65 70 75 80

Pro Thr Arg Arg Lys Pro Gly Lys Cys Pro Val Thr Tyr Gly Gln Cys
85 90 95

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caatgttnga tgcttaaccc cccaatttc tgtgagatgg atggccagtg caagcgtgac 360
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Gly Val Cys Pro Pro Lys Lys Ser Ala Gln Cys Leu Arg Tyr Lys Lys
    35                      40                      45

Pro Glu Xaa Gln Ser Asp Trp Gln Cys Pro Gly Lys Lys Arg Cys Cys
    50                      55                      60

Pro Asp Thr Cys Gly Ile Lys Cys Leu Asp Pro Val Asp Thr Pro Asn
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Gln Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg Asn	
165 170 175	
gtc aag gac agt gtt agt gct agt gaa gtg acc tca act gtg tac aac	695
Val Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn	
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Thr Val Ser Glu Gly Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg	
195 200 205	
cct gga aaa ctc ttc ccc aaa gat gta agc agc tcc act cca ccc agt	791
Pro Gly Lys Leu Phe Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser	
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Val Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn	
230 235 240	
gaa tct gtg agt gag ccc cga aaa ggc ttt atg tat tcc aga aac aca	887
Glu Ser Val Ser Glu Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr	
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Asn Glu Asn Pro Gln Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser	
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cat ggc atg ggc atc cag gtt ccg ctg aat gca aca gag ttc aac tat	983
His Gly Met Gly Ile Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr	
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Leu Cys Pro Ala Ile Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile	
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His Thr Ser Glu Lys Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu	
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Gln Ile Ala Trp Val Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe	
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Ser Gly Asp Ala Phe Leu His Leu Leu Pro His Ser His Ala Ser His	
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His His Ser His Ser His Glu Glu Pro Ala Met Glu Met Lys Arg Gly	
202	

390										395					400					
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Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly	
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att atg tta ctt att tcc ata ttt gaa cat aaa atc gtg ttt cgt ata	2375
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Asn Phe	
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Glu Glu Lys Val Asp Thr Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala 485 490 495		
Asp Ser Gln Glu Pro Ser His Phe Asp Ser Gln Gln Pro Ala Val Leu 500 505 510		
Glu Glu Glu Glu Val Met Ile Ala His Ala His Pro Gln Glu Val Tyr 515 520 525		
Asn Glu Tyr Val Pro Arg Gly Cys Lys Asn Lys Cys His Ser His Phe 530 535 540		
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Ala Thr Leu Ala Trp Met Val Ile Met Gly Asp Gly Leu His Asn Phe 595 600 605		
Ser Asp Gly Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser 610 615 620		
Gly Leu Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu 206		

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	645	650	655			
Ala Val Leu Tyr	Asn Ala Leu Ser	Ala Met Leu Ala	Tyr Leu Gly Met			
	660	665	670			
Ala Thr Gly Ile	Phe Ile Gly His	Tyr Ala Glu Asn	Val Ser Met Trp			
	675	680	685			
Ile Phe Ala Leu	Thr Ala Gly Leu	Phe Met Tyr Val	Ala Leu Val Asp			
	690	695	700			
Met Val Pro Glu	Met Leu His Asn	Asp Ala Ser Asp	His Gly Cys Ser			
705	710	715	720			
Arg Trp Gly Tyr	Phe Phe Leu Gln	Asn Ala Gly Met	Leu Leu Gly Phe			
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Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu Ala Ile	
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tcc aca cgg caa tat cat cta caa cag ctt ttc tac cgc tat gga gaa	144
Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr Gly Glu	
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Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln Asn Ile	
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Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His Asp His	
65 70 75 80	
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His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser Asp His	
85 90 95	
gag cat cac tca gac cac gag cat cac tct gac cat gat cat cac tcc	336
Glu His His Ser Asp His Glu His His Ser Asp His Asp His His Ser	
100 105 110	

cac cat aat cat gct gct tct ggt aaa aat aag cga aaa gct ctt tgc	384
His His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu Cys	
115 120 125	
cca gac cat gac tca gat agt tca ggt aaa gat cct aga aac agc cag	432
Pro Asp His Asp Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser Gln	
130 135 140	
ggg aaa gga gct cac cga cca gaa cat gcc agt ggt aga agg aat gtc	480
Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg Asn Val	
145 150 155 160	
aag gac agt gtt agt gct agt gaa gtg acc tca act gtg tac aac act	528
Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn Thr	
165 170 175	
gtc tct gaa gga act cac ttt cta gag aca ata gag act cca aga cct	576
Val Ser Glu Gly Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg Pro	
180 185 190	
gga aaa ctc ttc ccc aaa gat gta agc agc tcc act cca ccc agt gtc	624
Gly Lys Leu Phe Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser Val	
195 200 205	
aca tca aag agc cgg gtg agc cgg ctg gct ggt agg aaa aca aat gaa	672
Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn Glu	
210 215 220	
tct gtg agt gag ccc cga aaa ggc ttt atg tat tcc aga aac aca aat	720
Ser Val Ser Glu Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr Asn	
225 230 235 240	
gaa aat cct cag gag tgt ttc aat gca tca aag cta ctg aca tct cat	768
Glu Asn Pro Gln Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser His	
245 250 255	
ggc atg ggc atc cag gtt ccg ctg aat gca aca gag ttc aac tat ctc	816
Gly Met Gly Ile Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr Leu	
260 265 270	
tgt cca gcc atc atc aac caa att gat gct aga tct tgt ctg att cat	864
Cys Pro Ala Ile Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile His	
275 280 285	
aca agt gaa aag aag gct gaa atc cct cca aag acc tat tca tta caa	912
Thr Ser Glu Lys Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu Gln	
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<212> PRT

<213> Homo sapiens

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Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr Gly Glu
35 40 45

Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln Asn Ile
 50 55 60
 Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His Asp His
 65 70 75 80
 His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser Asp His
 85 90 95
 Glu His His Ser Asp His Glu His His Ser Asp His Asp His His Ser
 100 105 110
 His His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu Cys
 115 120 125
 Pro Asp His Asp Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser Gln
 130 135 140
 Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg Asn Val
 145 150 155 160
 Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn Thr
 165 170 175
 Val Ser Glu Gly Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg Pro
 180 185 190
 Gly Lys Leu Phe Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser Val
 195 200 205
 Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn Glu
 210 215 220
 Ser Val Ser Glu Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr Asn
 225 230 235 240
 Glu Asn Pro Gln Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser His
 245 250 255
 Gly Met Gly Ile Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr Leu
 260 265 270
 Cys Pro Ala Ile Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile His
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47

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Arg Gly Ser Gln Ser Asn Glu Thr Thr Ala Cys Ser Arg Leu Val Glu	
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att tct cga aga cac cag tgg gcc cgt tcc gag ccc tct gga ccg ccc	143
Ile Ser Arg Arg His Gln Trp Ala Arg Ser Glu Pro Ser Gly Pro Pro	
35 40 45	
gtg tgg aac caa acc tgc gcg cgt ggc cgg gcc gtg gga caa cga ggc	191
Val Trp Asn Gln Thr Cys Ala Arg Gly Arg Ala Val Gly Gln Arg Gly	
50 55 60	
cgc gga gac gaa ggc gca atg gcg agg aag tta tct gta atc ttg atc	239
Arg Gly Asp Glu Gly Ala Met Ala Arg Lys Leu Ser Val Ile Leu Ile	
65 70 75	
ctg acc ttt gcc ctc tct gtc aca aat ccc ctt cat gaa cta aaa gca	287
Leu Thr Phe Ala Leu Ser Val Thr Asn Pro Leu His Glu Leu Lys Ala	
80 85 90 95	
gct gct ttc ccc cag acc act gag aaa att agt ccg aat tgg gaa tct	335
Ala Ala Phe Pro Gln Thr Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser	
100 105 110	
ggc att aat gtt gac ttg gca att tcc aca cgg caa tat cat cta caa	383
Gly Ile Asn Val Asp Leu Ala Ile Ser Thr Arg Gln Tyr His Leu Gln	
115 120 125	
cag ctt ttc tac cgc tat gga gaa aat aat tct ttg tca gtt gaa ggg	431
Gln Leu Phe Tyr Arg Tyr Gly Glu Asn Asn Ser Leu Ser Val Glu Gly	
130 135 140	
ttc aga aaa tta ctt caa aat ata ggc ata gat aag att aaa aga atc	479
Phe Arg Lys Leu Leu Gln Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile	
145 150 155	
cat ata cac cat gac cac gac cat cac tca gac cac gag cat cac tca	527
His Ile His His Asp His Asp His His Ser Asp His Glu His His Ser	
160 165 170 175	
gac cat gag cgt cac tca gac cat gag cat cac tca gac cac gag cat	575
Asp His Glu Arg His Ser Asp His Glu His His Ser Asp His Glu His	
180 185 190	
cac tct gac cat gat cat cac tct cac cat aat cat gct gct ttt act	623
His Ser Asp His Asp His His Ser His His Asn His Ala Ala Phe Thr	
195 200 205	
gaa ggc tta tca agt ggt tta agt act tct gtt gct gtg ttc tgt cat	671
Glu Gly Leu Ser Ser Gly Leu Ser Thr Ser Val Ala Val Phe Cys His	
210 215 220	
gag ttg cct cat gaa tta ggt gac ttt gct gtt cta cta aag gct ggc	719
Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val Leu Leu Lys Ala Gly	
225 230 235	
atg acc gtt aag cag gct gtc ctt tat aat gca ttg tca gcc atg ctg	767
Met Thr Val Lys Gln Ala Val Leu Tyr Asn Ala Leu Ser Ala Met Leu	
240 245 250 255	
gcg tat ctt gga atg gca aca gga att ttc att ggt cat tat gct gaa	815
Ala Tyr Leu Gly Met Ala Thr Gly Ile Phe Ile Gly His Tyr Ala Glu	
260 265 270	
210	

aat gtt tct atg tgg ata ttt gca ctt act gct ggc tta ttc atg tat	863
Asn Val Ser Met Trp Ile Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr	
275 280 285	
gtt gct ctg gtt gat atg gta cct gaa atg ctg cac aat gat gct agt	911
Val Ala Leu Val Asp Met Val Pro Glu Met Leu His Asn Asp Ala Ser	
290 295 300	
gac cat gga tgt agc cac tgg ggg tat ttc ttt tta cag aat gct ggg	959
Asp His Gly Cys Ser His Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly	
305 310 315	
atg ctt ttg ggt ttt gga att atg tta ctt att tcc ata ttt gaa cat	1007
Met Leu Leu Gly Phe Gly Ile Met Leu Leu Ile Ser Ile Phe Glu His	
320 325 330 335	
aaa atc gtg ttt cgt ata aat ttc aat tct cca tca tca cca cca cca	1055
Lys Ile Val Phe Arg Ile Asn Phe Asn Ser Pro Ser Ser Pro Pro Pro	
340 345 350	
aaa cca cca tcc tca cag tca cag cca gcg cta ctc tcg gga gga gct	1103
Lys Pro Pro Ser Ser Gln Ser Gln Pro Ala Leu Leu Ser Gly Gly Ala	
355 360 365	
gaa aga tgc cgg cgt cgc cac tct ggc ctg gat ggt gat aat ggg	1148
Glu Arg Cys Arg Arg Arg His Ser Gly Leu Asp Gly Asp Asn Gly	
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35 40 45	
Trp Asn Gln Thr Cys Ala Arg Gly Arg Ala Val Gly Gln Arg Gly Arg	
50 55 60	
Gly Asp Glu Gly Ala Met Ala Arg Lys Leu Ser Val Ile Leu Ile Leu	
65 70 75 80	
Thr Phe Ala Leu Ser Val Thr Asn Pro Leu His Glu Leu Lys Ala Ala	
85 90 95	
Ala Phe Pro Gln Thr Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly	
100 105 110	
Ile Asn Val Asp Leu Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln	
115 120 125	
Leu Phe Tyr Arg Tyr Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe	
130 135 140	

Arg Lys Leu Leu Gln Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His
 145 150 155 160
 Ile His His Asp His Asp His His Ser Asp His Glu His His Ser Asp
 165 170 175
 His Glu Arg His Ser Asp His Glu His His Ser Asp His Glu His His
 180 185 190
 Ser Asp His Asp His His Ser His His Asn His Ala Ala Phe Thr Glu
 195 200 205
 Gly Leu Ser Ser Gly Leu Ser Thr Ser Val Ala Val Phe Cys His Glu
 210 215 220
 Leu Pro His Glu Leu Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met
 225 230 235 240
 Thr Val Lys Gln Ala Val Leu Tyr Asn Ala Leu Ser Ala Met Leu Ala
 245 250 255
 Tyr Leu Gly Met Ala Thr Gly Ile Phe Ile Gly His Tyr Ala Glu Asn
 260 265 270
 Val Ser Met Trp Ile Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val
 275 280 285
 Ala Leu Val Asp Met Val Pro Glu Met Leu His Asn Asp Ala Ser Asp
 290 295 300
 His Gly Cys Ser His Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met
 305 310 315 320
 Leu Leu Gly Phe Gly Ile Met Leu Leu Ile Ser Ile Phe Glu His Lys
 325 330 335
 Ile Val Phe Arg Ile Asn Phe Asn Ser Pro Ser Ser Pro Pro Pro Lys
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<211> 1101

<212> DNA

<213> Homo sapiens

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ca atg gcg agg aag tta tct gta atc ttg atc ctg acc ttt gcc ctc 167

Met Ala Arg Lys Leu Ser Val Ile Leu Ile Leu Thr Phe Ala Leu

1

5

10

15

212

tct gtc aca aat ccc ctt cat gaa cta aaa gca gct gct ttc ccc cag	215
Ser Val Thr Asn Pro Leu His Glu Leu Lys Ala Ala Ala Phe Pro Gln	
20 25 30	
acc act gag aaa att agt ccg aat tgg gaa tct ggc att aat gtt gac	263
Thr Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp	
35 40 45	
ttg gca att tcc aca cgg caa tat cat cta caa cag ctt ttc tac cgc	311
Leu Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg	
50 55 60	
tat gga gaa aat aat tct ttg tca gtt gaa ggg ttc aga aaa tta ctt	359
Tyr Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu	
65 70 75	
caa aat ata ggc ata gat aag att aaa aga atc cat ata cac cat gac	407
Gln Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp	
80 85 90 95	
cac gac cat cac tca gac cac gag cat cac tca gac cat gag cgt cac	455
His Asp His His Ser Asp His Glu His His Ser Asp His Glu Arg His	
100 105 110	
tca gac cat gag cat cac tca gac cac cat cct cac agt cac agc cag	503
Ser Asp His Glu His His Ser Asp His His Pro His Ser His Ser Gln	
115 120 125	
cgc tac tct cgg gag gag ctg aaa gat gcc ggc gtc gcc act ttg gcc	551
Arg Tyr Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala Thr Leu Ala	
130 135 140	
tgg atg gtg ata atg ggt gat ggc ctg cac aat ttc agc gat ggt cta	599
Trp Met Val Ile Met Gly Asp Gly Leu His Asn Phe Ser Asp Gly Leu	
145 150 155	
gca att ggt gct gct ttt act gaa ggc tta tca agt ggt tta agt act	647
Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly Leu Ser Thr	
160 165 170 175	
tct gtt gct gtg ttc tgt cat gag ttg cct cat gaa tta ggt gac ttt	695
Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe	
180 185 190	
gct gtt cta cta aag gct ggc atg acc gtt aag cag gct gtc ctt tat	743
Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Val Leu Tyr	
195 200 205	
aat gca ttg tca gcc atg ctg gcg tat ctt gga atg gca aca gga att	791
Asn Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala Thr Gly Ile	
210 215 220	
ttc att ggt cat tat gct gaa aat gtt tct atg tgg ata ttt gca ctt	839
Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile Phe Ala Leu	
225 230 235	
act gct ggc tta ttc atg cat gtt gct ctg gtt gat atg gta cct gaa	887
Thr Ala Gly Leu Phe Met His Val Ala Leu Val Asp Met Val Pro Glu	
240 245 250 255	
atg ctg cac aat gat gct agt gac cat gga tgt agc cgc tgg ggg tat	935
Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser Arg Trp Gly Tyr	
213	

260	265	270	
ttc ttt tta cag aat gct ggg atg ctt ttg ggt ttt gga att atg tta	983		
Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly Ile Met Leu			
275	280	285	
ctt att tcc ata ttt gaa cat aaa atc gtg ttt cgt ata aat ttc	1028		
Leu Ile Ser Ile Phe Glu His Lys Ile Val Phe Arg Ile Asn Phe			
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Val Thr Asn Pro Leu His Glu Leu Lys Ala Ala Ala Phe Pro Gln Thr			
20	25	30	
Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu			
35	40	45	
Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr			
50	55	60	
Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln			
65	70	75	80
Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His			
85	90	95	
Asp His His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser			
100	105	110	
Asp His Glu His His Ser Asp His His Pro His Ser His Ser Gln Arg			
115	120	125	
Tyr Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala Thr Leu Ala Trp			
130	135	140	
Met Val Ile Met Gly Asp Gly Leu His Asn Phe Ser Asp Gly Leu Ala			
145	150	155	160
Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly Leu Ser Thr Ser			
165	170	175	
Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala			
180	185	190	
Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Val Leu Tyr Asn			
195	200	205	
Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala Thr Gly Ile Phe			
210	215	220	
Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile Phe Ala Leu Thr			
	214		

225		230		235		240
Ala Gly Leu Phe Met His Val Ala Leu Val Asp Met Val Pro Glu Met						
		245		250		255
Leu His Asn Asp Ala Ser Asp His Gly Cys Ser Arg Trp Gly Tyr Phe						
		260		265		270
Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly Ile Met Leu Leu						
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Ile Ser Ile Phe Glu His Lys Ile Val Phe Arg Ile Asn Phe						
		290		295		300

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gtc aca aac ccc ctt cat gaa cta aaa gca gct gct ttc ccc cag acc	96
Val Thr Asn Pro Leu His Glu Leu Lys Ala Ala Ala Phe Pro Gln Thr	
20 25 30	
act gag aaa att agt ccg aat tgg gaa tct ggc att aat gtt gac ttg	144
Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu	
35 40 45	
gca att tcc aca cgg caa tat cat cta caa cag ctt ttc tac cgc tat	192
Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr	
50 55 60	
gga gaa aat aat tct ttg tca gtt gag ggg ttc aga aaa tta ctt caa	240
Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln	
65 70 75 80	
aat ata ggc ata gat aag att aaa aga atc cat ata cac cac gac cac	288
Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His	
85 90 95	
gac cat cac tca gac cac gag cat cac tca gac cat gag cgt cac tca	336
Asp His His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser	
100 105 110	
gac cat gag cat cac tca gac cac gag cat cac tct gac cat gat cat	384
Asp His Glu His His Ser Asp His Glu His His Ser Asp His Asp His	
115 120 125	
cac tct cac cat aat cat gct gct tct ggt aaa aat aag cga aaa gct	432
His Ser His His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala	
130 135 140	
ctt tgc cca gac cat gac tca gat agt tca ggt aaa gat cct aga aac	480
Leu Cys Pro Asp His Asp Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn	
145 150 155 160	
215	

agc	cag	ggg	aaa	gga	gct	cac	cga	cca	gaa	cat	gcc	agt	ggg	aga	agg	528
Ser	Gln	Gly	Lys	Gly	Ala	His	Arg	Pro	Glu	His	Ala	Ser	Gly	Arg	Arg	
				165					170					175		
aat	gtc	aag	gac	agt	gtt	agt	gct	agt	gaa	gtg	acc	tca	act	gtg	tac	576
Asn	Val	Lys	Asp	Ser	Val	Ser	Ala	Ser	Glu	Val	Thr	Ser	Thr	Val	Tyr	
			180					185					190			
aac	act	gtc	tct	gaa	gga	act	cac	ttt	cta	gag	aca	ata	gag	act	cca	624
Asn	Thr	Val	Ser	Glu	Gly	Thr	His	Phe	Leu	Glu	Thr	Ile	Glu	Thr	Pro	
		195					200					205				
aga	cct	gga	aaa	ctc	ttc	ccc	aaa	gat	gta	agc	agc	tcc	act	cca	ccc	672
Arg	Pro	Gly	Lys	Leu	Phe	Pro	Lys	Asp	Val	Ser	Ser	Ser	Thr	Pro	Pro	
	210					215					220					
agt	gtc	aca	tca	aag	agc	cgg	gtg	agc	cgg	ctg	gct	ggg	agg	aaa	aca	720
Ser	Val	Thr	Ser	Lys	Ser	Arg	Val	Ser	Arg	Leu	Ala	Gly	Arg	Lys	Thr	
225				230					235					240		
aat	gaa	tct	gtg	agt	gag	ccc	cga	aaa	ggc	ttt	atg	tat	tcc	aga	aac	768
Asn	Glu	Ser	Val	Ser	Glu	Pro	Arg	Lys	Gly	Phe	Met	Tyr	Ser	Arg	Asn	
			245						250					255		
aca	aat	gaa	aat	cct	cag	gag	tgt	ttc	aat	gca	tca	aag	cta	ctg	aca	816
Thr	Asn	Glu	Asn	Pro	Gln	Glu	Cys	Phe	Asn	Ala	Ser	Lys	Leu	Leu	Thr	
			260				265						270			
tct	cat	ggc	atg	ggc	atc	cag	gtt	ccg	ctg	aat	gca	aca	gag	ttc	aac	864
Ser	His	Gly	Met	Gly	Ile	Gln	Val	Pro	Leu	Asn	Ala	Thr	Glu	Phe	Asn	
		275				280						285				
tat	ctc	tgt	cca	gcc	atc	atc	aac	caa	att	gat	gct	aga	tct	tgt	ctg	912
Tyr	Leu	Cys	Pro	Ala	Ile	Ile	Asn	Gln	Ile	Asp	Ala	Arg	Ser	Cys	Leu	
	290					295				300						
att	cat	aca	agt	gaa	aag	aag	gct	gaa	atc	cct	cca	aag	acc	tat	tca	960
Ile	His	Thr	Ser	Glu	Lys	Lys	Ala	Glu	Ile	Pro	Pro	Lys	Thr	Tyr	Ser	
305				310						315				320		
tta	caa	ata	gcc	tgg	gtt	ggg	ggg	ttt	ata	gcc	att	tcc	atc	atc	agt	1008
Leu	Gln	Ile	Ala	Trp	Val	Gly	Gly	Phe	Ile	Ala	Ile	Ser	Ile	Ile	Ser	
			325						330					335		
ttc	ctg	tct	ctg	ctg	ggg	gtt	atc	tta	gtg	cct	ctc	atg	aat	cgg	gtg	1056
Phe	Leu	Ser	Leu	Leu	Gly	Val	Ile	Leu	Val	Pro	Leu	Met	Asn	Arg	Val	
			340					345					350			
ttt	ttc	aaa	ttt	ctc	ctg	agt	ttc	ctt	gtg	gca	ctg	gcc	gtt	ggg	act	1104
Phe	Phe	Lys	Phe	Leu	Leu	Ser	Phe	Leu	Val	Ala	Leu	Ala	Val	Gly	Thr	
		355					360					365				
ttg	agt	ggg	gat	gct	ttt	tta	cac	ctt	ctt	cca	cat	tct	cat	gca	agt	1152
Leu	Ser	Gly	Asp	Ala	Phe	Leu	His	Leu	Leu	Pro	His	Ser	His	Ala	Ser	
	370					375					380					
cac	cac	cat	agt	cat	agc	cat	gaa	gaa	cca	gca	atg	gaa	atg	aaa	aga	1200
His	His	His	Ser	His	Ser	His	Glu	Glu	Pro	Ala	Met	Glu	Met	Lys	Arg	
385				390						395				400		
gga	cca	ctt	ttt	agt	cat	ctg	tct	tct	caa	aac	ata	gaa	gaa	agt	gcc	1248
Gly	Pro	Leu	Phe	Ser	His	Leu	Ser	Ser	Gln	Asn	Ile	Glu	Glu	Ser	Ala	
									216							

405										410					415					
tat	ttt	gat	tcc	acg	tgg	aag	ggt	cta	aca	gct	cta	gga	ggc	ctg	tat	1296				
Tyr	Phe	Asp	Ser	Thr	Trp	Lys	Gly	Leu	Thr	Ala	Leu	Gly	Gly	Leu	Tyr					
			420					425					430							
ttc	atg	ttt	ctt	gtt	gaa	cat	gtc	ctc	aca	ttg	atc	aaa	caa	ttt	aaa	1344				
Phe	Met	Phe	Leu	Val	Glu	His	Val	Leu	Thr	Leu	Ile	Lys	Gln	Phe	Lys					
		435					440					445								
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	450					455					460									
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Glu	Ile	Lys	Lys	Gln	Leu	Ser	Lys	Tyr	Glu	Ser	Gln	Leu	Ser	Thr	Asn					
465					470				475						480					
gag	gag	aaa	gta	gat	aca	gat	gat	cga	act	gaa	ggc	tat	tta	cga	gca	1488				
Glu	Glu	Lys	Val	Asp	Thr	Asp	Asp	Arg	Thr	Glu	Gly	Tyr	Leu	Arg	Ala					
			485					490						495						
gac	tca	caa	gag	ccc	tcc	cac	ttt	gat	tct	cag	cag	cct	gca	gtc	ttg	1536				
Asp	Ser	Gln	Glu	Pro	Ser	His	Phe	Asp	Ser	Gln	Gln	Pro	Ala	Val	Leu					
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gaa	gaa	gaa	gag	gtc	atg	ata	gct	cat	gct	cat	cca	cag	gaa	gtc	tac	1584				
Glu	Glu	Glu	Glu	Val	Met	Ile	Ala	His	Ala	His	Pro	Gln	Glu	Val	Tyr					
		515					520					525								
aat	gaa	tat	gta	ccc	aga	ggg	tgc	aag	aat	aaa	tgc	cat	tca	cat	ttc	1632				
Asn	Glu	Tyr	Val	Pro	Arg	Gly	Cys	Lys	Asn	Lys	Cys	His	Ser	His	Phe					
	530					535					540									
cac	gat	aca	ctc	ggc	cag	tca	gac	gat	ctc	att	cac	cac	cat	cat	gac	1680				
His	Asp	Thr	Leu	Gly	Gln	Ser	Asp	Asp	Leu	Ile	His	His	His	His	Asp					
545					550				555						560					
tac	cat	cat	att	ctc	cat	cat	cac	cac	cac	caa	aac	cac	cat	cct	cac	1728				
Tyr	His	His	Ile	Leu	His	His	His	His	His	Gln	Asn	His	His	Pro	His					
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gcc	act	ctg	gcc	tgg	atg	gtg	ata	atg	ggt	gat	ggc	ctg	cac	aat	ttc	1824				
Ala	Thr	Leu	Ala	Trp	Met	Val	Ile	Met	Gly	Asp	Gly	Leu	His	Asn	Phe					
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Ser	Asp	Gly	Leu	Ala	Ile	Gly	Ala	Ala	Phe	Thr	Glu	Gly	Leu	Ser	Ser					
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Gly	Leu	Ser	Thr	Ser	Val	Ala	Val	Phe	Cys	His	Glu	Leu	Pro	His	Glu					
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Leu	Gly	Asp	Phe	Ala	Val	Leu	Leu	Lys	Ala	Gly	Met	Thr	Val	Lys	Gln					
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gct	gtc	ctt	tat	aat	gca	ttg	tca	gcc	atg	ctg	gcg	tat	ctt	gga	atg	2016				
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Ala Val Leu Tyr Asn Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met	
660 665 670	
gca aca gga att ttc att ggt cat tat gct gaa aat gtt tct atg tgg	2064
Ala Thr Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp	
675 680 685	
ata ttt gca ctt act gct ggc tta ttc atg tat gtt gct ctg gtt gat	2112
Ile Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp	
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Met Val Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser	
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cgc tgg ggg tat ttc ttt tta cag aat gct ggg atg ctt ttg ggt ttt	2208
Arg Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe	
725 730 735	
gga att atg tta ctt att tcc ata ttt gaa cat aaa atc gtg ttt cgt	2256
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Ile Asn Phe	
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Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu	
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Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr	
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Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln	
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Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His	
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Asp His Glu His His Ser Asp His Glu His His Ser Asp His Asp His	
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His Ser His His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala	
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Leu Cys Pro Asp His Asp Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn	
145 150 155 160	

Ser Gln Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg
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 Asn Val Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr
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 Asn Thr Val Ser Glu Gly Thr His Phe Leu Glu Thr Ile Glu Thr Pro
 195 200 205
 Arg Pro Gly Lys Leu Phe Pro Lys Asp Val Ser Ser Ser Thr Pro Pro
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 Ser Val Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr
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 Asn Glu Ser Val Ser Glu Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn
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 Thr Asn Glu Asn Pro Gln Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr
 260 265 270
 Ser His Gly Met Gly Ile Gln Val Pro Leu Asn Ala Thr Glu Phe Asn
 275 280 285
 Tyr Leu Cys Pro Ala Ile Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu
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 Ile His Thr Ser Glu Lys Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser
 305 310 315 320
 Leu Gln Ile Ala Trp Val Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser
 325 330 335
 Phe Leu Ser Leu Leu Gly Val Ile Leu Val Pro Leu Met Asn Arg Val
 340 345 350
 Phe Phe Lys Phe Leu Leu Ser Phe Leu Val Ala Leu Ala Val Gly Thr
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 His His His Ser His Ser His Glu Glu Pro Ala Met Glu Met Lys Arg
 385 390 395 400
 Gly Pro Leu Phe Ser His Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala
 405 410 415
 Tyr Phe Asp Ser Thr Trp Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr
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 Phe Met Phe Leu Val Glu His Val Leu Thr Leu Ile Lys Gln Phe Lys
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 Asp Lys Lys Lys Lys Asn Gln Lys Lys Pro Glu Asn Asp Asp Asp Val
 450 455 460
 Glu Ile Lys Lys Gln Leu Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn
 465 470 475 480
 Glu Glu Lys Val Asp Thr Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala
 485 490 495

Asp Ser Gln Glu Pro Ser His Phe Asp Ser Gln Gln Pro Ala Val Leu
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 Glu Glu Glu Glu Val Met Ile Ala His Ala His Pro Gln Glu Val Tyr
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 Tyr His His Ile Leu His His His His His Gln Asn His His Pro His
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 Ser His Ser Gln Arg Tyr Ser Arg Glu Glu Leu Lys Asp Ala Gly Val
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 Ala Thr Leu Ala Trp Met Val Ile Met Gly Asp Gly Leu His Asn Phe
 595 600 605
 Ser Asp Gly Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser
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 Gly Leu Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu
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 Leu Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln
 645 650 655
 Ala Val Leu Tyr Asn Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met
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 675 680 685
 Ile Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp
 690 695 700
 Met Val Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser
 705 710 715 720
 Arg Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe
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agg aag tta tct gta atc ttg atc ctg acc ttt gcc ctc tct gtc aca	Arg Lys Leu Ser Val Ile Leu Ile Leu Thr Phe Ala Leu Ser Val Thr	96		
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aac ccc ctt cat gaa cta aaa gca gct gct ttc ccc cag acc act gag	Asn Pro Leu His Glu Leu Lys Ala Ala Ala Phe Pro Gln Thr Thr Glu	144		
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aaa att agt ccg aat tgg gaa tct ggc att aat gtt gac ttg gca att	Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu Ala Ile	192		
50	55	60		
tcc aca cgg caa tat cat cta caa cag ctt ttc tac cgc tat gga gaa	Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr Gly Glu	240		
65	70	75	80	
aat aat tct ttg tca gtt gag ggg ttc aga aaa tta ctt caa aat ata	Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln Asn Ile	288		
85	90	95		
ggc ata gat aag att aaa aga atc cat ata cac cac gac cac gac cat	Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His Asp His	336		
100	105	110		
cac tca gac cac gag cat cac tca gac cat gag cgt cac tca gac cat	His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser Asp His	384		
115	120	125		
gag cat cac tca gac cac gag cat cac tct gac cat gat cat cac tct	Glu His His Ser Asp His Glu His His Ser Asp His Asp His His Ser	432		
130	135	140		
cac cat aat cat gct gct tct ggt aaa aat aag cga aaa gct ctt tgc	His His Asn His Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu Cys	480		
145	150	155	160	
cca gac cat gac tca gat agt tca ggt aaa gat cct aga aac agc cag	Pro Asp His Asp Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser Gln	528		
165	170	175		
ggg aaa gga gct cac cga cca gaa cat gcc agt ggt aga agg aat gtc	Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg Asn Val	576		
180	185	190		
aag gac agt gtt agt gct agt gaa gtg acc tca act gtg tac aac act	Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn Thr	624		
195	200	205		
gtc tct gaa gga act cac ttt cta gag aca ata gag act cca aga cct	Val Ser Glu Gly Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg Pro	672		
210	215	220		
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225	230	235	240	
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245	250	255		
tct gtg agt gag ccc cga aaa ggc ttt atg tat tcc aga aac aca aat		816		
	221			

Ser	Val	Ser	Glu	Pro	Arg	Lys	Gly	Phe	Met	Tyr	Ser	Arg	Asn	Thr	Asn	
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gaa	aat	cct	cag	gag	tgt	ttc	aat	gca	tca	aag	cta	ctg	aca	tct	cat	864
Glu	Asn	Pro	Gln	Glu	Cys	Phe	Asn	Ala	Ser	Lys	Leu	Leu	Thr	Ser	His	
		275					280					285				
ggc	atg	ggc	atc	cag	gtt	ccg	ctg	aat	gca	aca	gag	ttc	aac	tat	ctc	912
Gly	Met	Gly	Ile	Gln	Val	Pro	Leu	Asn	Ala	Thr	Glu	Phe	Asn	Tyr	Leu	
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tgt	cca	gcc	atc	atc	aac	caa	att	gat	gct	aga	tct	tgt	ctg	att	cat	960
Cys	Pro	Ala	Ile	Ile	Asn	Gln	Ile	Asp	Ala	Arg	Ser	Cys	Leu	Ile	His	
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aca	agt	gaa	aag	aag	gct	gaa	atc	cct	cca	aag	acc	tat	tca	tta	caa	1008
Thr	Ser	Glu	Lys	Lys	Ala	Glu	Ile	Pro	Pro	Lys	Thr	Tyr	Ser	Leu	Gln	
				325					330					335		
ata	gcc	tgg	gtt	ggg	ggg	ttt	ata	gcc	att	tcc	atc	atc	agt	ttc	ctg	1056
Ile	Ala	Trp	Val	Gly	Gly	Phe	Ile	Ala	Ile	Ser	Ile	Ile	Ser	Phe	Leu	
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tct	ctg	ctg	ggg	gtt	atc	tta	gtg	cct	ctc	atg	aat	cgg	gtg	ttt	ttc	1104
Ser	Leu	Leu	Gly	Val	Ile	Leu	Val	Pro	Leu	Met	Asn	Arg	Val	Phe	Phe	
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Lys	Phe	Leu	Leu	Ser	Phe	Leu	Val	Ala	Leu	Ala	Val	Gly	Thr	Leu	Ser	
	370					375					380					
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Gly	Asp	Ala	Phe	Leu	His	Leu	Leu	Pro	His	Ser	His	Ala	Ser	His	His	
385					390					395					400	
cat	agt	cat	agc	cat	gaa	gaa	cca	gca	atg	gaa	atg	aaa	aga	gga	cca	1248
His	Ser	His	Ser	His	Glu	Glu	Pro	Ala	Met	Glu	Met	Lys	Arg	Gly	Pro	
				405					410					415		
ctt	ttt	agt	cat	ctg	tct	tct	caa	aac	ata	gaa	gaa	agt	gcc	tat	ttt	1296
Leu	Phe	Ser	His	Leu	Ser	Ser	Gln	Asn	Ile	Glu	Glu	Ser	Ala	Tyr	Phe	
			420					425					430			
gat	tcc	acg	tgg	aag	ggg	cta	aca	gct	cta	gga	ggc	ctg	tat	ttc	atg	1344
Asp	Ser	Thr	Trp	Lys	Gly	Leu	Thr	Ala	Leu	Gly	Gly	Leu	Tyr	Phe	Met	
		435					440					445				
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Phe	Leu	Val	Glu	His	Val	Leu	Thr	Leu	Ile	Lys	Gln	Phe	Lys	Asp	Lys	
	450					455					460					
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Lys	Lys	Lys	Asn	Gln	Lys	Lys	Pro	Glu	Asn	Asp	Asp	Asp	Val	Glu	Ile	
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Lys	Lys	Gln	Leu	Ser	Lys	Tyr	Glu	Ser	Gln	Leu	Ser	Thr	Asn	Glu	Glu	
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Lys	Val	Asp	Thr	Asp	Asp	Arg	Thr	Glu	Gly	Tyr	Leu	Arg	Ala	Asp	Ser	
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Gln Glu Pro Ser His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu Glu	
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Ser Gln Arg Tyr Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala Thr	
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Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly	
645 650 655	
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Asp Phe Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Val	
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675 680 685	
gga att ttc att ggt cat tat gct gaa aat gtt tct atg tgg ata ttt	2112
Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile Phe	
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Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met Val	
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Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser Arg Trp	
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Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly Ile	
740 745 750	
atg tta ctt att tcc ata ttt gaa cat aaa atc gtg ttt cgt ata aat	2304
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ttc tag
Phe

2310

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Ser	Thr	Arg	Gln	Tyr	His	Leu	Gln	Gln	Leu	Phe	Tyr	Arg	Tyr	Gly	Glu	
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Asn	Asn	Ser	Leu	Ser	Val	Glu	Gly	Phe	Arg	Lys	Leu	Leu	Gln	Asn	Ile	
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Pro	Asp	His	Asp	Ser	Asp	Ser	Ser	Gly	Lys	Asp	Pro	Arg	Asn	Ser	Gln	
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Gly	Lys	Gly	Ala	His	Arg	Pro	Glu	His	Ala	Ser	Gly	Arg	Arg	Asn	Val	
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Ile	Ala	Trp	Val	Gly	Gly	Phe	Ile	Ala	Ile	Ser	Ile	Ile	Ser	Phe	Leu
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Thr	Leu	Gly	Gln	Ser	Asp	Asp	Leu	Ile	His	His	His	His	Asp	Tyr	His
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His	Ile	Leu	His	His	His	His	His	Gln	Asn	His	His	Pro	His	Ser	His
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Ser	Gln	Arg	Tyr	Ser	Arg	Glu	Glu	Leu	Lys	Asp	Ala	Gly	Val	Ala	Thr
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Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly 645 650 655		
Asp Phe Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Val 660 665 670		
Leu Tyr Asn Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala Thr 675 680 685		
Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile Phe 690 695 700		
Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met Val 705 710 715 720		
Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser Arg Trp 725 730 735		
Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly Ile 740 745 750		
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Phe

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tcc aca cgg caa tat cat cta caa cag ctt ttc tac cgc tat gga gaa Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr Gly Glu 35 40 45	144
aat aat tct ttg tca gtt gag ggg ttc aga aaa tta ctt caa aat ata Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln Asn Ile 50 55 60	192
ggc ata gat aag att aaa aga atc cat ata cac cac gac cac gac cat Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His Asp His 65 70 75 80	240
cac tca gac cac gag cat cac tca gac cat gag cgt cac tca gac cat 226	288

His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser Asp His	85	90	95	
gag cat cac tca gac cac gag cat cac tct gac cat gat cat cac tct				336
Glu His His Ser Asp His Glu His His Ser Asp His Asp His His Ser	100	105	110	
cac cat aat cat gct gct tct ggt aaa aat aag cga aaa gct ctt tgc				384
His His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu Cys	115	120	125	
cca gac cat gac tca gat agt tca ggt aaa gat cct aga aac agc cag				432
Pro Asp His Asp Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser Gln	130	135	140	
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Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg Asn Val	145	150	155	160
aag gac agt gtt agt gct agt gaa gtg acc tca act gtg tac aac act				528
Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn Thr	165	170	175	
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Val Ser Glu Gly Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg Pro	180	185	190	
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Gly Lys Leu Phe Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser Val	195	200	205	
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Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn Glu	210	215	220	
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Ser Val Ser Glu Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr Asn	225	230	235	240
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Gly Met Gly Ile Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr Leu	260	265	270	
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Cys Pro Ala Ile Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile His	275	280	285	
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Thr Ser Glu Lys Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu Gln	290	295	300	
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Ile Ala Trp Val Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe Leu	305	310	315	320
tct ctg ctg ggg gtt atc tta gtg cct ctc atg aat cgg gtg ttt ttc				1008
Ser Leu Leu Gly Val Ile Leu Val Pro Leu Met Asn Arg Val Phe Phe	325	330	335	

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His Ser His Ser His Glu Glu Pro Ala Met Glu Met Lys Arg Gly Pro	
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Phe Leu Val Glu His Val Leu Thr Leu Ile Lys Gln Phe Lys Asp Lys	
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Lys Val Asp Thr Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala Asp Ser	
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Gln Glu Pro Ser His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu Glu	
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Glu Glu Val Met Ile Ala His Ala His Pro Gln Glu Val Tyr Asn Glu	
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Tyr Val Pro Arg Gly Cys Lys Asn Lys Cys His Ser His Phe His Asp	
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Thr Leu Gly Gln Ser Asp Asp Leu Ile His His His His Asp Tyr His	
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His Ile Leu His His His His Gln Asn His His Pro His Ser His	
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Ser Gln Arg Tyr Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala Thr	
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Leu Ala Trp Met Val Ile Met Gly Asp Gly Gln His Asn Phe Ser Asp	
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Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly	
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Phe	

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Val	Ser	Glu	Gly	Thr	His	Phe	Leu	Glu	Thr	Ile	Glu	Thr	Pro	Arg	Pro				
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Ala	Leu	Thr	Ala	Gly	Leu	Phe	Met	Tyr	Val	Ala	Leu	Val	Asp	Met	Val
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Pro	Glu	Met	Leu	His	Asn	Asp	Ala	Ser	Asp	His	Gly	Cys	Ser	Arg	Trp
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Phe

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Gln Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg Asn
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Leu Cys Pro Ala Ile Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile	
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Ser Gly Asp Ala Phe Leu His Leu Leu Pro His Ser His Ala Ser His	
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His His Ser His Ser His Glu Glu Pro Ala Met Glu Met Lys Arg Gly	
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cca ctt ttc agt cat ctg tct tct caa aac ata gaa gaa agt gcc tat	1367
Pro Leu Phe Ser His Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala Tyr	
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Phe Asp Ser Thr Trp Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr Phe	
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Met Phe Leu Val Glu His Val Leu Thr Leu Ile Lys Gln Phe Lys Asp	
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Lys Lys Lys Lys Asn Gln Lys Lys Pro Glu Asn Asp Asp Asp Val Glu	
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Ile Lys Lys Gln Leu Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn Glu	
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gag aaa gta gat aca gat gat cga act gaa ggc tat tta cga gca gac	1607
Glu Lys Val Asp Thr Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala Asp	
485 490 495	
tca caa gag ccc tcc cac ttt gat tct cag cag cct gca gtc ttg gaa	1655
Ser Gln Glu Pro Ser His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu	
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Glu Glu Glu Val Met Ile Ala His Ala His Pro Gln Glu Val Tyr Asn	
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Glu Tyr Val Pro Arg Gly Cys Lys Asn Lys Cys His Ser His Phe His	
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Asp Thr Leu Gly Gln Ser Asp Asp Leu Ile His His His His Asp Tyr	
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His His Ile Leu His His His His His Gln Asn His His Pro His Ser	
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His Ser Gln Arg Tyr Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala	
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Thr Leu Ala Trp Met Val Ile Met Gly Asp Gly Leu His Asn Phe Ser	
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gat ggc cta gca att ggt gct gct ttt act gaa ggc tta tca agt ggt	1991
Asp Gly Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly	
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Leu Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu	
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Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala	
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Val Leu Tyr Asn Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala	
660 665 670	
aca gga att ttc att ggt cat tat gct gaa aat gtt tct atg tgg ata	2183
Thr Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile	
675 680 685	
ttt gca ctt act gct ggc tta ttc atg tat gtt gct ctg gtt gat atg	2231
Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met	
234	

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Val Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser Arg				
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Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly				
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att atg tta ctt att tcc ata ttt gaa cat aaa atc gtg ttt cgt ata				2375
Ile Met Leu Leu Ile Ser Ile Phe Glu His Lys Ile Val Phe Arg Ile				
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Asn Phe				
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Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu
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 Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr
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 Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln
 65 70 75 80
 Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His
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 Ser Gln Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg
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 Ser Val Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr
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 Ser His Gly Met Gly Ile Gln Val Pro Leu Asn Ala Thr Glu Phe Asn
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 Tyr Leu Cys Pro Ala Ile Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu
 290 295 300
 Ile His Thr Ser Glu Lys Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser
 305 310 315 320
 Leu Gln Ile Ala Trp Val Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser
 325 330 335
 Phe Leu Ser Leu Leu Gly Val Ile Leu Val Pro Leu Met Asn Arg Val
 340 345 350
 Phe Phe Lys Phe Leu Leu Ser Phe Leu Val Ala Leu Ala Val Gly Thr
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Ile	Phe	Ala	Leu	Thr	Ala	Gly	Leu	Phe	Met	Tyr	Val	Ala	Leu	Val	Asp		
690						695					700						

Met Val Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser
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Arg Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe
725 730 735

Gly Ile Met Leu Leu Ile Ser Ile Phe Glu His Lys Ile Val Phe Arg
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Ile Asn Phe
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cgaggaagtt atctgtaatc ttgatcctga cctttgccc n ctctgtcaca aatccccctc 180
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<210> 114

<211> 755

<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<222> (15)..(15)

<223> Wherein Xaa may be any naturally occurring amino acid

<400> 114

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Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu
      35             40             45

Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr
      50             55             60

Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln
      65             70             75             80

Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His
          85             90             95

Asp His His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser
          100             105             110

Asp His Glu His His Ser Glu His Glu His His Ser Asp His Asp His
          115             120             125

His Ser His His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala
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Leu Cys Pro Asp His Asp Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn
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Ser Gln Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg
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Asn	Val	Lys	Asp	Ser	Val	Ser	Ala	Ser	Glu	Val	Thr	Ser	Thr	Val	Tyr	180	185	190
Asn	Thr	Val	Ser	Glu	Gly	Thr	His	Phe	Leu	Glu	Thr	Ile	Glu	Thr	Pro	195	200	205
Arg	Pro	Gly	Lys	Leu	Phe	Pro	Lys	Asp	Val	Ser	Ser	Ser	Thr	Pro	Pro	210	215	220
Ser	Val	Thr	Ser	Lys	Ser	Arg	Val	Ser	Arg	Leu	Ala	Gly	Arg	Lys	Thr	225	230	235
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Ser	His	Gly	Met	Gly	Ile	Gln	Val	Pro	Leu	Asn	Ala	Thr	Glu	Phe	Asn	275	280	285
Tyr	Leu	Cys	Pro	Ala	Ile	Ile	Asn	Gln	Ile	Asp	Ala	Arg	Ser	Cys	Leu	290	295	300
Ile	His	Thr	Ser	Glu	Lys	Lys	Ala	Glu	Ile	Pro	Pro	Lys	Thr	Tyr	Ser	305	310	315
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Phe	Leu	Ser	Leu	Leu	Gly	Val	Ile	Leu	Val	Pro	Leu	Met	Asn	Arg	Val	340	345	350
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Leu	Ser	Gly	Asp	Ala	Phe	Leu	His	Leu	Leu	Pro	His	Ser	His	Ala	Ser	370	375	380
His	His	His	Ser	His	Ser	His	Glu	Glu	Pro	Ala	Met	Glu	Met	Lys	Arg	385	390	395
Gly	Pro	Leu	Phe	Ser	His	Leu	Ser	Ser	Gln	Asn	Ile	Glu	Glu	Ser	Ala	405	410	415
Tyr	Phe	Asp	Ser	Thr	Trp	Lys	Gly	Leu	Thr	Ala	Leu	Gly	Gly	Leu	Tyr	420	425	430
Phe	Met	Phe	Leu	Val	Glu	His	Val	Leu	Thr	Leu	Ile	Lys	Gln	Phe	Lys	435	440	445
Asp	Lys	Lys	Lys	Lys	Asn	Gln	Lys	Lys	Pro	Glu	Asn	Asp	Asp	Asp	Val	450	455	460
Glu	Ile	Lys	Lys	Gln	Leu	Ser	Lys	Tyr	Glu	Ser	Gln	Leu	Ser	Thr	Asn	465	470	475
Glu	Glu	Lys	Val	Asp	Thr	Asp	Asp	Arg	Thr	Glu	Gly	Tyr	Leu	Arg	Ala	485	490	495
Asp	Ser	Gln	Glu	Pro	Ser	His	Phe	Asp	Ser	Gln	Gln	Pro	Ala	Val	Leu	500	505	510

240

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 545 550 555 560
 Tyr His His Ile Leu His His His His His Gln Asn His His Pro His
 565 570 575
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 Ala Thr Leu Ala Trp Met Val Ile Met Gly Asp Gly Leu His Asn Phe
 595 600 605
 Ser Asp Gly Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser
 610 615 620
 Gly Leu Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu
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 Ala Val Leu Tyr Asn Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met
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 Ala Thr Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp
 675 680 685
 Ile Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp
 690 695 700
 Met Val Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser
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 Arg Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe
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Gly Ser Ser Tyr Ala Ala Gln Thr Tyr Ser Ser Glu Tyr Thr Thr Glu
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Ile Met Asn Pro Asp Tyr Thr Lys Leu Thr Met Asp Leu Gly Ser Thr
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Val Glu Gly Tyr Ser Ser Asn Tyr Glu Leu Lys Pro Ser Cys Val Tyr
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Gln Met Gln Arg Pro Leu Ile Lys Val Glu Glu Gly Arg Ala Pro Ser
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Glu Val Leu Pro Ser Thr Ser Met Tyr Phe Lys Gln Ser Pro Pro Ser
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Leu Phe His Phe Lys Pro Ser Pro Pro His Pro Pro Ala Pro Ser Pro	
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Gln His Tyr Gly Val Arg Thr Cys Glu Gly Cys Lys Gly Phe Phe Lys	
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Leu Asp Tyr Ser Arg Tyr Cys Pro Thr Asp Gln Ala Ala Ala Gly Thr	
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 Ala Thr Ala Thr Thr Ser Leu Pro Ser Ile Ser Thr Phe Val Glu Gly
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 Tyr Ser Ser Asn Tyr Glu Leu Lys Pro Ser Cys Val Tyr Gln Met Gln
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 Arg Pro Leu Ile Lys Val Glu Glu Gly Arg Ala Pro Ser Tyr His His
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 His His His His His His His His His His His His Gln Gln Gln His
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 Gln Gln Pro Ser Ile Pro Pro Ala Ser Ser Pro Glu Asp Glu Val Leu
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 Pro Ser Thr Ser Met Tyr Phe Lys Gln Ser Pro Pro Ser Thr Pro Thr
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Thr	Pro	Ala	Phe	Pro	Pro	Gln	Ala	Gly	Ala	Leu	Trp	Asp	Glu	Ala	Leu	145	150	155	160
Pro	Ser	Ala	Pro	Gly	Cys	Ile	Ala	Pro	Gly	Pro	Leu	Leu	Asp	Pro	Pro	165	170	175	
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Phe	Lys	Pro	Ser	Pro	Pro	His	Pro	Pro	Ala	Pro	Ser	Pro	Ala	Gly	Gly	195	200	205	
His	His	Leu	Gly	Tyr	Asp	Pro	Thr	Ala	Ala	Ala	Ala	Leu	Ser	Leu	Pro	210	215	220	
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His	Pro	Tyr	Gly	Leu	Pro	Leu	Ala	Lys	Arg	Ala	Ala	Pro	Leu	Ala	Phe	245	250	255	
Pro	Pro	Leu	Gly	Leu	Thr	Pro	Ser	Pro	Thr	Ala	Ser	Ser	Leu	Leu	Gly	260	265	270	
Glu	Ser	Pro	Ser	Leu	Pro	Ser	Pro	Pro	Ser	Arg	Ser	Ser	Ser	Ser	Gly	275	280	285	
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Gly	Val	Arg	Thr	Cys	Glu	Gly	Cys	Lys	Gly	Phe	Phe	Lys	Arg	Thr	Val	305	310	315	320
Gln	Lys	Asn	Ala	Lys	Tyr	Val	Cys	Leu	Ala	Asn	Lys	Asn	Cys	Pro	Val	325	330	335	
Asp	Lys	Arg	Arg	Arg	Asn	Arg	Cys	Gln	Tyr	Cys	Arg	Phe	Gln	Lys	Cys	340	345	350	
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Gly	Arg	Arg	Gly	Arg	Leu	Pro	Ser	Lys	Pro	Lys	Ser	Pro	Leu	Gln	Gln	370	375	380	
Glu	Pro	Ser	Gln	Pro	Ser	Pro	Pro	Ser	Pro	Pro	Ile	Cys	Met	Met	Asn	385	390	395	400
Ala	Leu	Val	Arg	Ala	Leu	Thr	Asp	Ser	Thr	Pro	Arg	Asp	Leu	Asp	Tyr	405	410	415	
Ser	Arg	Tyr	Cys	Pro	Thr	Asp	Gln	Ala	Ala	Ala	Gly	Thr	Asp	Ala	Glu	420	425	430	
His	Val	Gln	Gln	Phe	Tyr	Asn	Leu	Leu	Thr	Ala	Ser	Ile	Asp	Val	Ser	435	440	445	
Arg	Ser	Trp	Ala	Glu	Arg	Ile	Pro	Gly	Phe	Thr	Asp	Leu	Pro	Lys	Glu	450	455	460	
Asp	Gln	Thr	Leu	Leu	Ile	Glu	Ser	Ala	Phe	Leu	Glu	Leu	Phe	Val	Leu	465	470	475	480

Arg Leu Ser Ile Arg Ser Asn Thr Ala Glu Asp Lys Phe Val Phe Cys
 485 490 495
 Asn Gly Leu Val Leu His Arg Leu Gln Cys Leu Arg Gly Phe Gly Glu
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 Trp Leu Asp Ser Ile Lys Asp Phe Ser Leu Asn Leu Gln Ser Leu Asn
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 545 550 555 560
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 565 570 575
 Glu Pro Asn Glu Ser Lys Val Leu Val Ala Leu Val Glu Leu Arg Lys
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 Gln Asp His His Val His Ile Gly Gln Gly Lys Thr Leu Leu Leu Thr
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 Ser Ser Ala Thr Val Tyr Ser Ile His Ile Ser Glu Gly Gly Lys Leu
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 gtc att aaa gac cac gac gag ccg att gtt ttg cga acc cgg cac atc 193
 Val Ile Lys Asp His Asp Glu Pro Ile Val Leu Arg Thr Arg His Ile
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 ctg att gac aac gga gga gag ctg cat gct ggg agt gcc ctc tgc cct 241
 Leu Ile Asp Asn Gly Gly Glu Leu His Ala Gly Ser Ala Leu Cys Pro
 65 70 75 80
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 Phe Gln Gly Asn Phe Thr Ile Ile Leu Tyr Gly Arg Ala Asp Glu Gly
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Ile	Gln	Pro	Asp	Pro	Tyr	Tyr	Gly	Leu	Lys	Tyr	Ile	Gly	Val	Gly	Lys				
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gga	ggc	gct	ctt	gag	ttg	cat	gga	cag	aaa	aag	ctc	tcc	tgg	aca	ttt	385			
Gly	Gly	Ala	Leu	Glu	Leu	His	Gly	Gln	Lys	Lys	Leu	Ser	Trp	Thr	Phe				
115								120				125							
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Phe	Glu	Arg	Ser	Trp	Gly	His	Arg	Gly	Val	Ile	Val	His	Val	Ile	Asp				
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Leu	Asp	Asp	Met	Ala	Arg	Lys	Ala	Met	Thr	Lys	Leu	Gly	Ser	Lys	His				
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Leu	Thr	Val	Thr	Ile	Asp	Thr	Asn	Val	Asn	Ser	Thr	Ile							

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Cys	Arg	Ser	Cys	Ala	Pro	Asn	Gln	Val	Lys	Val	Ala	Gly	Lys	Pro	Met		
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Cys	Asn	Ala	Val	Ser	Thr	Phe	Trp	Met	Ala	Asn	Pro	Asn	Asn	Asn	Leu		
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Ile Asn Cys Ala Ala Ala Gly Ser Glu Glu Thr Gly Phe Trp Phe Ile	
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Phe His His Val Pro Thr Gly Pro Ser Val Gly Met Tyr Ser Pro Gly	
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Tyr Ser Glu His Ile Pro Leu Gly Lys Phe Tyr Asn Asn Arg Ala His	
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Asn Gly Ile Gly Leu Thr Leu Ala Ser Gly Gly Thr Phe Pro Tyr Asp	
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Gly Asn Val Gly Thr Glu Met Met Asp Asn Arg Ile Trp Gly Pro Gly	
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Gly Leu Asp His Ser Gly Arg Thr Leu Pro Ile Gly Gln Asn Phe Pro	
770 775 780	
att aga gga att cag tta tat gat ggc ccc atc aac atc caa aac tgc	2401
Ile Arg Gly Ile Gln Leu Tyr Asp Gly Pro Ile Asn Ile Gln Asn Cys	
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act ttc cga aag ttt gtg gcc ctg gag ggc cgg cac acc agc gcc ctg	2449
Thr Phe Arg Lys Phe Val Ala Leu Glu Gly Arg His Thr Ser Ala Leu	
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gcc ttc cgc ctg aat aat gcc tgg cag agc tgc ccc cat aac aac gtg	2497
Ala Phe Arg Leu Asn Asn Ala Trp Gln Ser Cys Pro His Asn Asn Val	
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Gly Glu Pro Gly Pro Trp Phe Asn Gln Leu Asp Met Asp Gly Asp Lys	
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Thr Ser Val Phe His Asp Val Asp Gly Ser Val Ser Glu Tyr Pro Gly	
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Ser Tyr Leu Thr Lys Asn Asp Asn Trp Leu Val Arg His Pro Asp Cys	
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Ile Asn Val Pro Asp Trp Arg Gly Ala Ile Cys Ser Gly Cys Tyr Ala	
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Gln Met Tyr Ile Gln Ala Tyr Lys Thr Ser Asn Leu Arg Met Lys Ile	
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Ile Lys Asn Asp Phe Pro Ser His Pro Leu Tyr Leu Glu Gly Ala Leu	
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Thr Arg Ser Thr His Tyr Gln Gln Tyr Gln Pro Val Val Thr Leu Gln	
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Lys Gly Tyr Thr Ile His Trp Asp Gln Thr Ala Pro Ala Glu Leu Ala	
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Cys Tyr Pro Arg Gly Thr Thr Phe Ser Ile Leu Ser Asp Val His Asn	
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Glu Arg Glu Lys Phe Ala Phe Cys Ser Met Lys Gly Cys Glu Arg Ile	
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Lys Ile Lys Ala Leu Ile Pro Lys Asn Ala Gly Val Ser Asp Cys Thr	
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Ala Thr Ala Tyr Pro Lys Phe Thr Glu Arg Ala Val Val Asp Val Pro	
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Met Pro Lys Lys Leu Phe Gly Ser Gln Leu Lys Thr Lys Asp His Phe			
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Leu Glu Val Lys Met Glu Ser Ser Lys Gln His Phe Phe His Leu Trp			
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Asn Asp Phe Ala Tyr Ile Glu Val Asp Gly Lys Lys Tyr Pro Ser Ser			
	1140	1145	1150
gag gat ggc atc cag gtg gtg gtg att gac ggg aac caa ggg cgc gtg			3505
Glu Asp Gly Ile Gln Val Val Val Ile Asp Gly Asn Gln Gly Arg Val			
	1155	1160	1165
gtg agc cac acg agc ttc agg aac tcc att ctg caa ggc ata cca tgg			3553
Val Ser His Thr Ser Phe Arg Asn Ser Ile Leu Gln Gly Ile Pro Trp			
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cag ctt ttc aac tat gtg gcg acc atc cct gac aat tcc ata gtg ctt			3601
Gln Leu Phe Asn Tyr Val Ala Thr Ile Pro Asp Asn Ser Ile Val Leu			
	1185	1190	1200
atg gca tca aag gga aga tac gtc tcc aga ggc cca tgg acc aga gtg			3649
Met Ala Ser Lys Gly Arg Tyr Val Ser Arg Gly Pro Trp Thr Arg Val			
	1205	1210	1215
ctg gaa aag ctt ggg gca gac agg ggt ctc aag ttg aaa gag caa atg			3697
Leu Glu Lys Leu Gly Ala Asp Arg Gly Leu Lys Leu Lys Glu Gln Met			
	1220	1225	1230
gca ttc gtt ggc ttc aaa ggc agc ttc cgg ccc atc tgg gtg aca ctg			3745
Ala Phe Val Gly Phe Lys Gly Ser Phe Arg Pro Ile Trp Val Thr Leu			
	1235	1240	1245
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Asp Thr Glu Asp His Lys Ala Lys Ile Phe Gln Val Val Pro Ile Pro			.
	1250	1255	1260
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Ser Ser Ala Thr Val Tyr Ser Ile His Ile Ser Glu Gly Gly Lys Leu			
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Val	Ile	Lys	Asp	His	Asp	Glu	Pro	Ile	Val	Leu	Arg	Thr	Arg	His	Ile	50	55	60	
Leu	Ile	Asp	Asn	Gly	Gly	Glu	Leu	His	Ala	Gly	Ser	Ala	Leu	Cys	Pro	65	70	75	80
Phe	Gln	Gly	Asn	Phe	Thr	Ile	Ile	Leu	Tyr	Gly	Arg	Ala	Asp	Glu	Gly	85	90	95	
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Gly	Gly	Ala	Leu	Glu	Leu	His	Gly	Gln	Lys	Lys	Leu	Ser	Trp	Thr	Phe	115	120	125	
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Phe	Glu	Arg	Ser	Trp	Gly	His	Arg	Gly	Val	Ile	Val	His	Val	Ile	Asp	145	150	155	160
Pro	Lys	Ser	Gly	Thr	Val	Ile	His	Ser	Asp	Arg	Phe	Asp	Thr	Tyr	Arg	165	170	175	
Ser	Lys	Lys	Glu	Ser	Glu	Arg	Leu	Val	Gln	Tyr	Leu	Asn	Ala	Val	Pro	180	185	190	
Asp	Gly	Arg	Ile	Leu	Ser	Val	Ala	Val	Asn	Asp	Glu	Gly	Ser	Arg	Asn	195	200	205	
Leu	Asp	Asp	Met	Ala	Arg	Lys	Ala	Met	Thr	Lys	Leu	Gly	Ser	Lys	His	210	215	220	
Phe	Leu	His	Leu	Gly	Phe	Arg	Val	Glu	Trp	Thr	Glu	Trp	Phe	Asp	His	225	230	235	240
Asp	Lys	Val	Ser	Gln	Thr	Lys	Gly	Gly	Glu	Lys	Ile	Ser	Asp	Leu	Trp	245	250	255	
Lys	Ala	His	Pro	Gly	Lys	Ile	Cys	Asn	Arg	Pro	Ile	Asp	Ile	Gln	Gln	260	265	270	
Ala	Thr	Thr	Met	Asp	Gly	Val	Asn	Leu	Ser	Thr	Glu	Val	Val	Tyr	Lys	275	280	285	
Lys	Gly	Gln	Asp	Tyr	Arg	Phe	Ala	Cys	Tyr	Asp	Arg	Gly	Arg	Ala	Cys	290	295	300	
Arg	Ser	Tyr	Arg	Val	Arg	Phe	Leu	Cys	Gly	Lys	Pro	Val	Arg	Pro	Lys	305	310	315	320
Leu	Thr	Val	Thr	Ile	Asp	Thr	Asn	Val	Asn	Ser	Thr	Ile	Leu	Asn	Leu	325	330	335	
Glu	Asp	Asn	Val	Gln	Ser	Trp	Lys	Pro	Gly	Asp	Thr	Leu	Val	Ile	Ala	340	345	350	
Ser	Thr	Asp	Tyr	Ser	Met	Tyr	Gln	Ala	Glu	Glu	Phe	Gln	Val	Leu	Pro	355	360	365	
Cys	Arg	Ser	Cys	Ala	Pro	Asn	Gln	Val	Lys	Val	Ala	Gly	Lys	Pro	Met	370	375	380	

Tyr	Leu	His	Ile	Gly	Glu	Glu	Ile	Asp	Gly	Val	Asp	Met	Arg	Ala	Glu	
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Val	Gly	Leu	Leu	Ser	Arg	Asn	Ile	Ile	Val	Met	Gly	Glu	Met	Glu	Asp	
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Lys	Cys	Tyr	Pro	Tyr	Arg	Asn	His	Ile	Cys	Asn	Phe	Phe	Asp	Phe	Asp	
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Thr	Phe	Gly	Gly	His	Ile	Lys	Phe	Ala	Leu	Gly	Phe	Lys	Ala	Ala	His	
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Pro	Glu	Glu	Arg	Asn	Thr	Phe	Asp	His	Cys	Leu	Gly	Leu	Leu	Val	Lys	
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Glu	Ala	Ser	Ala	Lys	Asp	Lys	Arg	Pro	Phe	Leu	Ser	Ile	Ile	Ser	Ala	
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Arg	Tyr	Ser	Pro	His	Gln	Asp	Ala	Asp	Pro	Leu	Lys	Pro	Arg	Glu	Pro	
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Trp	Leu	Arg	Gly	Gly	Asp	Val	Trp	Leu	Asp	Ser	Cys	Arg	Phe	Ala	Asp	
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 Leu Glu Thr His Leu Pro Gln Asn Thr Gln Ser Arg Glu Gly Ala Gly
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Leu	Glu	Asp	Asn	Val	Gln	Ser	Trp	Lys	Pro	Gly	Asp	Thr	Leu	Val	Ile	
	445						450					455				
gcc	agt	act	gat	tac	tcc	atg	tac	cag	gca	gaa	gag	ttc	cag	gtg	ctt	1443
Ala	Ser	Thr	Asp	Tyr	Ser	Met	Tyr	Gln	Ala	Glu	Glu	Phe	Gln	Val	Leu	
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ccc	tgc	aga	tcc	tgc	gcc	ccc	aac	cag	gtc	aaa	gtg	gca	ggg	aaa	cca	1491
Pro	Cys	Arg	Ser	Cys	Ala	Pro	Asn	Gln	Val	Lys	Val	Ala	Gly	Lys	Pro	
475					480					485					490	
atg	tac	ctg	cac	atc	ggg	gag	gag	ata	gac	ggc	gtg	gac	atg	cgg	gcg	1539
Met	Tyr	Leu	His	Ile	Gly	Glu	Glu	Ile	Asp	Gly	Val	Asp	Met	Arg	Ala	
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Glu	Val	Gly	Leu	Leu	Ser	Arg	Asn	Ile	Ile	Val	Met	Gly	Glu	Met	Glu	
			510					515					520			
gac	aaa	tgc	tac	ccc	tac	aga	aac	cac	atc	tgc	aat	ttc	ttt	gac	ttc	1635
Asp	Lys	Cys	Tyr	Pro	Tyr	Arg	Asn	His	Ile	Cys	Asn	Phe	Phe	Asp	Phe	
		525					530					535				
gat	acc	ttt	ggg	ggc	cac	atc	aag	ttt	gct	ctg	gga	ttt	aag	gca	gca	1683
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Asp	Thr	Phe	Gly	Gly	His	Ile	Lys	Phe	Ala	Leu	Gly	Phe	Lys	Ala	Ala		
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His	Leu	Glu	Gly	Thr	Glu	Leu	Lys	His	Met	Gly	Gln	Gln	Leu	Val	Gly		
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Gln	Tyr	Pro	Ile	His	Phe	His	Leu	Ala	Gly	Asp	Val	Asp	Glu	Arg	Gly		
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ggt	tat	gac	cca	ccc	aca	tac	atc	agg	gac	ctc	tcc	atc	cat	cat	aca	1827	
Gly	Tyr	Asp	Pro	Pro	Thr	Tyr	Ile	Arg	Asp	Leu	Ser	Ile	His	His	Thr		
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Phe	Ser	Arg	Cys	Val	Thr	Val	His	Gly	Ser	Asn	Gly	Leu	Leu	Ile	Lys		
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Met	Ile	Thr	Glu	Asp	Ser	Tyr	Pro	Gly	Tyr	Ile	Pro	Lys	Pro	Arg	Gln		
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Asp	Cys	Asn	Ala	Val	Ser	Thr	Phe	Trp	Met	Ala	Asn	Pro	Asn	Asn	Asn		
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ctc	atc	aac	tgt	gcc	gct	gca	gga	tct	gag	gaa	act	gga	ttt	tgg	ttt	2163	
Leu	Ile	Asn	Cys	Ala	Ala	Ala	Gly	Ser	Glu	Glu	Thr	Gly	Phe	Trp	Phe		
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att	ttt	cac	cac	gta	cca	acg	ggc	ccc	tcc	gtg	gga	atg	tac	tcc	cca	2211	
Ile	Phe	His	His	Val	Pro	Thr	Gly	Pro	Ser	Val	Gly	Met	Tyr	Ser	Pro		
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ggt	tat	tca	gag	cac	att	cca	ctg	gga	aaa	ttc	tat	aac	aac	cga	gca	2259	
Gly	Tyr	Ser	Glu	His	Ile	Pro	Leu	Gly	Lys	Phe	Tyr	Asn	Asn	Arg	Ala		
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His	Ser	Asn	Tyr	Arg	Ala	Gly	Met	Ile	Ile	Asp	Asn	Gly	Val	Lys	Thr		
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Thr	Glu	Ala	Ser	Ala	Lys	Asp	Lys	Arg	Pro	Phe	Leu	Ser	Ile	Ile	Ser		
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gcc	aga	tac	agc	cct	cac	cag	gac	gcc	gac	ccg	ctg	aag	ccc	cgg	gag	2403	
Ala	Arg	Tyr	Ser	Pro	His	Gln	Asp	Ala	Asp	Pro	Leu	Lys	Pro	Arg	Glu		
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Pro Ala Ile Ile Arg His Phe Ile Ala Tyr Lys Asn Gln Asp His Gly	
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Ala Trp Leu Arg Gly Gly Asp Val Trp Leu Asp Ser Cys Arg Phe Ala	
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Asp Asn Gly Ile Gly Leu Thr Leu Ala Ser Gly Gly Thr Phe Pro Tyr	
830 835 840	
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Asp Asp Gly Ser Lys Gln Glu Ile Lys Asn Ser Leu Phe Val Gly Glu	
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Ser Gly Asn Val Gly Thr Glu Met Met Asp Asn Arg Ile Trp Gly Pro	
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ggc ggc ttg gac cat agc gga agg acc ctc cct ata ggc cag aat ttt	2691
Gly Gly Leu Asp His Ser Gly Arg Thr Leu Pro Ile Gly Gln Asn Phe	
875 880 885 890	
cca att aga gga att cag tta tat gat ggc ccc atc aac atc caa aac	2739
Pro Ile Arg Gly Ile Gln Leu Tyr Asp Gly Pro Ile Asn Ile Gln Asn	
895 900 905	
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Cys Thr Phe Arg Lys Phe Val Ala Leu Glu Gly Arg His Thr Ser Ala	
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Leu Ala Phe Arg Leu Asn Asn Ala Trp Gln Ser Cys Pro His Asn Asn	
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Val Thr Gly Ile Ala Phe Glu Asp Val Pro Ile Thr Ser Arg Val Phe	
940 945 950	
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Phe Gly Glu Pro Gly Pro Trp Phe Asn Gln Leu Asp Met Asp Gly Asp	
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Lys Thr Ser Val Phe His Asp Val Asp Gly Ser Val Ser Glu Tyr Pro	
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Gly Ser Tyr Leu Thr Lys Asn Asp Asn Trp Leu Val Arg His Pro Asp	
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Cys Ile Asn Val Pro Asp Trp Arg Gly Ala Ile Cys Ser Gly Cys Tyr	
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Ala Gln Met Tyr Ile Gln Ala Tyr Lys Thr Ser Asn Leu Arg Met Lys	
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Ile Ile Lys Asn Asp Phe Pro Ser His Pro Leu Tyr Leu Glu Gly Ala	
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ctc acc agg agc acc cat tac cag caa tac caa ccg gtt gtc acc ctg	3219
Leu Thr Arg Ser Thr His Tyr Gln Gln Tyr Gln Pro Val Val Thr Leu	
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Gln Lys Gly Tyr Thr Ile His Trp Asp Gln Thr Ala Pro Ala Glu Leu	
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ctc tgc tac ccg cga ggc acc aca ttc tcc atc ctc tcg gat gtt cac	3363
Leu Cys Tyr Pro Arg Gly Thr Thr Phe Ser Ile Leu Ser Asp Val His	
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Tyr Trp Asp Glu Asp Ser Gly Leu Leu Phe Leu Lys Leu Lys Ala Gln	
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Ile Lys Ile Lys Ala Leu Ile Pro Lys Asn Ala Gly Val Ser Asp Cys	
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Pro Met Pro Lys Lys Leu Phe Gly Ser Gln Leu Lys Thr Lys Asp His	
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Phe Leu Glu Val Lys Met Glu Ser Ser Lys Gln His Phe Phe His Leu	
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Val Val Ser His Thr Ser Phe Arg Asn Ser Ile Leu Gln Gly Ile Pro	
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Trp Gln Leu Phe Asn Tyr Val Ala Thr Ile Pro Asp Asn Ser Ile Val	

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Val Leu Glu Lys Leu Gly Ala Asp Arg Gly Leu Lys Leu Lys Glu Gln			
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Pro Pro Pro Pro Pro Val Pro Arg Ala Ser Arg Arg Leu Thr Lys Arg			
35	40	45	
Leu Glu Arg Glu Asp Arg Ser Thr Ala Leu Gln Pro Gly Gln Gln Ser			
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Glu Thr Leu Ser Gln Lys Lys Lys Arg Ser Lys Asn Asn Tyr Ala Val			
65	70	75	80
Cys Leu Asp Ile Leu Ile Phe Val Leu Ile Ser Phe Phe Leu Pro Leu			
85	90	95	
Lys Thr Pro Leu Gly Glu Thr Ser Ala Ala Gly Cys Pro Asp Gln Ser			
100	105	110	
Pro Glu Leu Gln Pro Trp Asn Pro Gly His Asp Gln Asp His His Val			
115	120	125	
His Ile Gly Gln Gly Lys Thr Leu Leu Leu Thr Ser Ser Ala Thr Val			
130	135	140	
Tyr Ser Ile His Ile Ser Glu Gly Gly Lys Leu Val Ile Lys Asp His			
145	150	155	160
Asp Glu Pro Ile Val Leu Arg Thr Arg His Ile Leu Ile Asp Asn Gly			
165	170	175	

Gly	Glu	Leu	His	Ala	Gly	Ser	Ala	Leu	Cys	Pro	Phe	Gln	Gly	Asn	Phe		
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Thr	Ile	Ile	Leu	Tyr	Gly	Arg	Ala	Asp	Glu	Gly	Ile	Gln	Pro	Asp	Pro		
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Tyr	Tyr	Gly	Leu	Lys	Tyr	Ile	Gly	Val	Gly	Lys	Gly	Gly	Ala	Leu	Glu		
	210					215					220						
Leu	His	Gly	Gln	Lys	Lys	Leu	Ser	Trp	Thr	Phe	Leu	Asn	Lys	Thr	Leu		
225				230						235					240		
His	Pro	Gly	Gly	Met	Ala	Glu	Gly	Gly	Tyr	Phe	Phe	Glu	Arg	Ser	Trp		
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Glu	Arg	Leu	Val	Gln	Tyr	Leu	Asn	Ala	Val	Pro	Asp	Gly	Arg	Ile	Leu		
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Ser	Val	Ala	Val	Asn	Asp	Glu	Gly	Ser	Arg	Asn	Leu	Asp	Asp	Met	Ala		
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Arg	Lys	Ala	Met	Thr	Lys	Leu	Gly	Ser	Lys	His	Phe	Leu	His	Leu	Gly		
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Lys	Ile	Cys	Asn	Arg	Pro	Ile	Asp	Ile	Gln	Gln	Ala	Thr	Thr	Met	Asp		
	370					375					380						
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Arg	Phe	Ala	Cys	Tyr	Asp	Arg	Gly	Arg	Ala	Cys	Arg	Ser	Tyr	Arg	Val		
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Arg	Phe	Leu	Cys	Gly	Lys	Pro	Val	Arg	Pro	Lys	Leu	Thr	Val	Thr	Ile		
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Asp	Thr	Asn	Val	Asn	Ser	Thr	Ile	Leu	Asn	Leu	Glu	Asp	Asn	Val	Gln		
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Ser	Trp	Lys	Pro	Gly	Asp	Thr	Leu	Val	Ile	Ala	Ser	Thr	Asp	Tyr	Ser		
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Met	Tyr	Gln	Ala	Glu	Glu	Phe	Gln	Val	Leu	Pro	Cys	Arg	Ser	Cys	Ala		
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Arg	Asn	Ile	Ile	Val	Met	Gly	Glu	Met	Glu	Asp	Lys	Cys	Tyr	Pro	Tyr		
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Ile	Lys	Phe	Ala	Leu	Gly	Phe	Lys	Ala	Ala	His	Leu	Glu	Gly	Thr	Glu		
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His	Leu	Ala	Gly	Asp	Val	Asp	Glu	Arg	Gly	Gly	Tyr	Asp	Pro	Pro	Thr		
			580					585					590				
Tyr	Ile	Arg	Asp	Leu	Ser	Ile	His	His	Thr	Phe	Ser	Arg	Cys	Val	Thr		
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Pro	Ser	Asp	Arg	Asp	Ser	Lys	Met	Cys	Lys	Met	Ile	Thr	Glu	Asp	Ser		
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		675					680					685					
Thr	Phe	Trp	Met	Ala	Asn	Pro	Asn	Asn	Asn	Leu	Ile	Asn	Cys	Ala	Ala		
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Ala	Gly	Ser	Glu	Glu	Thr	Gly	Phe	Trp	Phe	Ile	Phe	His	His	Val	Pro		
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785					790					795					800		
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Glu Ile Lys Asn Ser Leu Phe Val Gly Glu Ser Gly Asn Val Gly Thr
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 Glu Met Met Asp Asn Arg Ile Trp Gly Pro Gly Gly Leu Asp His Ser
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 Gly Arg Thr Leu Pro Ile Gly Gln Asn Phe Pro Ile Arg Gly Ile Gln
 885 890 895
 Leu Tyr Asp Gly Pro Ile Asn Ile Gln Asn Cys Thr Phe Arg Lys Phe
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 Val Ala Leu Glu Gly Arg His Thr Ser Ala Leu Ala Phe Arg Leu Asn
 915 920 925
 Asn Ala Trp Gln Ser Cys Pro His Asn Asn Val Thr Gly Ile Ala Phe
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 Glu Asp Val Pro Ile Thr Ser Arg Val Phe Phe Gly Glu Pro Gly Pro
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 Trp Phe Asn Gln Leu Asp Met Asp Gly Asp Lys Thr Ser Val Phe His
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 Phe Asn Lys Gly Asp Trp Ile Arg Val Gly Leu Cys Tyr Pro Arg Gly
 1090 1095 1100
 Thr Thr Phe Ser Ile Leu Ser Asp Val His Asn Arg Leu Leu Lys Gln
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 1125 1130 1135
 Glu Gln Ser Tyr Pro Gly Arg Ser His Tyr Tyr Trp Asp Glu Asp Ser
 1140 1145 1150
 Gly Leu Leu Phe Leu Lys Leu Lys Ala Gln Asn Glu Arg Glu Lys Phe
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 Ala Phe Cys Ser Met Lys Gly Cys Glu Arg Ile Lys Ile Lys Ala Leu
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Ile Pro Lys Asn Ala Gly Val Ser Asp Cys Thr Ala Thr Ala Tyr Pro
1185 1190 1195 1200

Lys Phe Thr Glu Arg Ala Val Val Asp Val Pro Met Pro Lys Lys Leu
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Phe Gly Ser Gln Leu Lys Thr Lys Asp His Phe Leu Glu Val Lys Met
1220 1225 1230

Glu Ser Ser Lys Gln His Phe Phe His Leu Trp Asn Asp Phe Ala Tyr
1235 1240 1245

Ile Glu Val Asp Gly Lys Lys Tyr Pro Ser Ser Glu Asp Gly Ile Gln
1250 1255 1260

Val Val Val Ile Asp Gly Asn Gln Gly Arg Val Val Ser His Thr Ser
1265 1270 1275 1280

Phe Arg Asn Ser Ile Leu Gln Gly Ile Pro Trp Gln Leu Phe Asn Tyr
1285 1290 1295

Val Ala Thr Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser Lys Gly
1300 1305 1310

Arg Tyr Val Ser Arg Gly Pro Trp Thr Arg Val Leu Glu Lys Leu Gly
1315 1320 1325

Ala Asp Arg Gly Leu Lys Leu Lys Glu Gln Met Ala Phe Val Gly Phe
1330 1335 1340

Lys Gly Ser Phe Arg Pro Ile Trp Val Thr Leu Asp Thr Glu Asp His
1345 1350 1355 1360

Lys Ala Lys Ile Phe Gln Val Val Pro Ile Pro Val Val Lys Lys Lys
1365 1370 1375

Lys Leu

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Cys Pro Asp Gln Ser Pro Glu Leu Gln Pro Trp Asn Pro
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ggc cat gac caa gac cac cat gtg cat atc ggc cag ggc aag aca ctg 97
Gly His Asp Gln Asp His His Val His Ile Gly Gln Gly Lys Thr Leu
15 20 25

ctg ctc acc tct tct gcc acg gtc tat tcc atc cac atc tca gag gga 145
Leu Leu Thr Ser Ser Ala Thr Val Tyr Ser Ile His Ile Ser Glu Gly
30 35 40 45

ggc aag ctg gtc att aaa gac cac gac gag ccg att gtt ttg cga acc 193
Gly Lys Leu Val Ile Lys Asp His Asp Glu Pro Ile Val Leu Arg Thr
266

50										55										60										
cgg	cac	atc	ctg	att	gac	aac	gga	gga	gag	ctg	cat	gct	ggg	agt	gcc	241														
Arg	His	Ile	Leu	Ile	Asp	Asn	Gly	Gly	Glu	Leu	His	Ala	Gly	Ser	Ala															
65					70					75																				
ctc	tgc	cct	ttc	cag	ggc	aat	ttc	acc	atc	att	ttg	tat	gga	agg	gct	289														
Leu	Cys	Pro	Phe	Gln	Gly	Asn	Phe	Thr	Ile	Ile	Leu	Tyr	Gly	Arg	Ala															
80					85					90																				
gat	gaa	ggt	att	cag	ccg	gat	cct	tac	tat	ggt	ctg	aag	tac	att	ggg	337														
Asp	Glu	Gly	Ile	Gln	Pro	Asp	Pro	Tyr	Tyr	Gly	Leu	Lys	Tyr	Ile	Gly															
95					100					105																				
gtt	ggt	aaa	gga	ggc	gct	ctt	gag	ttg	cat	gga	cag	aaa	aag	ctc	tcc	385														
Val	Gly	Lys	Gly	Gly	Ala	Leu	Glu	Leu	His	Gly	Gln	Lys	Lys	Leu	Ser															
110	115					120					125																			
tgg	aca	ttt	ctg	aac	aag	acc	ctt	cac	cca	ggt	ggc	atg	gca	gaa	gga	433														
Trp	Thr	Phe	Leu	Asn	Lys	Thr	Leu	His	Pro	Gly	Gly	Met	Ala	Glu	Gly															
130					135					140																				
ggc	tat	ttt	ttt	gaa	agg	agc	tgg	ggc	cac	cgt	gga	gtt	att	gtt	cat	481														
Gly	Tyr	Phe	Phe	Glu	Arg	Ser	Trp	Gly	His	Arg	Gly	Val	Ile	Val	His															
145					150					155																				
gtc	atc	gac	ccc	aaa	tca	ggc	aca	gtc	atc	cat	tct	gac	cgg	ttt	gac	529														
Val	Ile	Asp	Pro	Lys	Ser	Gly	Thr	Val	Ile	His	Ser	Asp	Arg	Phe	Asp															
160					165					170																				
acc	tat	aga	tcc	aag	aaa	gag	agt	gaa	cgt	ctg	gtc	cag	tat	ttg	aac	577														
Thr	Tyr	Arg	Ser	Lys	Lys	Glu	Ser	Glu	Arg	Leu	Val	Gln	Tyr	Leu	Asn															
175					180					185																				
gcg	gtg	ccc	gat	ggc	agg	atc	ctt	tct	gtt	gca						610														
Ala	Val	Pro	Asp	Gly	Arg	Ile	Leu	Ser	Val	Ala																				
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1	5					10					15																			
Gln	Asp	His	His	Val	His	Ile	Gly	Gln	Gly	Lys	Thr	Leu	Leu	Leu	Thr															
20					25					30																				
Ser	Ser	Ala	Thr	Val	Tyr	Ser	Ile	His	Ile	Ser	Glu	Gly	Gly	Lys	Leu															
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Val	Ile	Lys	Asp	His	Asp	Glu	Pro	Ile	Val	Leu	Arg	Thr	Arg	His	Ile															
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Leu	Ile	Asp	Asn	Gly	Gly	Glu	Leu	His	Ala	Gly	Ser	Ala	Leu	Cys	Pro															
65	70					75					80																			
Phe	Gln	Gly	Asn	Phe	Thr	Ile	Ile	Leu	Tyr	Gly	Arg	Ala	Asp	Glu	Gly															
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Ile	Gln	Pro	Asp	Pro	Tyr	Tyr	Gly	Leu	Lys	Tyr	Ile	Gly	Val	Gly	Lys															
267																														

100							105					110				
Gly	Gly	Ala	Leu	Glu	Leu	His	Gly	Gln	Lys	Lys	Leu	Ser	Trp	Thr	Phe	
115							120					125				
Leu	Asn	Lys	Thr	Leu	His	Pro	Gly	Gly	Met	Ala	Glu	Gly	Gly	Tyr	Phe	
130							135					140				
Phe	Glu	Arg	Ser	Trp	Gly	His	Arg	Gly	Val	Ile	Val	His	Val	Ile	Asp	
145							150					155				
Pro	Lys	Ser	Gly	Thr	Val	Ile	His	Ser	Asp	Arg	Phe	Asp	Thr	Tyr	Arg	
165							170					175				
Ser	Lys	Lys	Glu	Ser	Glu	Arg	Leu	Val	Gln	Tyr	Leu	Asn	Ala	Val	Pro	
180							185					190				
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att gac ggg aac caa ggg cgc gtg gtg agc cac acg agc ttc agg aac Ile Asp Gly Asn Gln Gly Arg Val Val Ser His Thr Ser Phe Arg Asn 20 25 30															96
tcc att ctg caa ggc ata cca tgg cag ctt ttc aac tat gtg gcg acc Ser Ile Leu Gln Gly Ile Pro Trp Gln Leu Phe Asn Tyr Val Ala Thr 35 40 45															144
atc cct gac aat tcc ata gtg ctt atg gca tca aag gga aga tac gtc Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser Lys Gly Arg Tyr Val 50 55 60															192
tcc aga ggc cca tgg acc aga gtg ctg gaa aag ctt ggg gca gac agg Ser Arg Gly Pro Trp Thr Arg Val Leu Glu Lys Leu Gly Ala Asp Arg 65 70 75 80															240
ggt ctc aag ttg aaa gag caa atg gca ttc gtt ggc ttc aaa ggc agc Gly Leu Lys Leu Lys Glu Gln Met Ala Phe Val Gly Phe Lys Gly Ser 85 90 95															288
ttc cgg ccc atc tgg gtg aca ctg gac act gag gat cac aaa gcc aaa Phe Arg Pro Ile Trp Val Thr Leu Asp Thr Glu Asp His Lys Ala Lys 100 105 110															336
atc ttc caa gtt gtg ccc atc cct gtg gtg Ile Phe Gln Val Val Pro Ile Pro Val Val 115 120															366

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<211> 122
 <212> PRT
 <213> Homo sapiens

<400> 124

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Asp Gly Lys Lys Tyr Pro Ser Ser Glu Asp Gly Ile Gln Val Val Val
 1          5          10          15

Ile Asp Gly Asn Gln Gly Arg Val Val Ser His Thr Ser Phe Arg Asn
          20          25          30

Ser Ile Leu Gln Gly Ile Pro Trp Gln Leu Phe Asn Tyr Val Ala Thr
          35          40          45

Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser Lys Gly Arg Tyr Val
          50          55          60

Ser Arg Gly Pro Trp Thr Arg Val Leu Glu Lys Leu Gly Ala Asp Arg
          65          70          75          80

Gly Leu Lys Leu Lys Glu Gln Met Ala Phe Val Gly Phe Lys Gly Ser
          85          90          95

Phe Arg Pro Ile Trp Val Thr Leu Asp Thr Glu Asp His Lys Ala Lys
          100          105          110

Ile Phe Gln Val Val Pro Ile Pro Val Val
          115          120

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<220>

<221> CDS

<222> (11)..(763)

<400> 125

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      His Val His Ile Gly Gln Gly Lys Thr Leu Leu Thr
        1          5          10

tct tct gcc acg gtc tat tcc atc cac atc tca gag gga ggc aag ctg      97
Ser Ser Ala Thr Val Tyr Ser Ile His Ile Ser Glu Gly Gly Lys Leu
      15          20          25

gtc att aaa gac cac gac gag ccg att gtt ttg cga acc cgg cac atc      145
Val Ile Lys Asp His Asp Glu Pro Ile Val Leu Arg Thr Arg His Ile
      30          35          40          45

ctg att gac aac gga gga gag ctg cat gct ggg agt gcc ctc tgc cct      193
Leu Ile Asp Asn Gly Gly Glu Leu His Ala Gly Ser Ala Leu Cys Pro
          50          55          60

ttc cag ggc aat ttc acc atc att ttg tat gga agg gct gat gaa ggt      241
Phe Gln Gly Asn Phe Thr Ile Ile Leu Tyr Gly Arg Ala Asp Glu Gly
          65          70          75

att cag ccg gat cct tac tat ggt ctg aag tac att ggg gtt ggt aaa      289
Ile Gln Pro Asp Pro Tyr Tyr Gly Leu Lys Tyr Ile Gly Val Gly Lys
      80          85          90

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gga ggc gct ctt gag ttg cat gga cag aaa aag ctc tcc tgg aca ttt	337
Gly Gly Ala Leu Glu Leu His Gly Gln Lys Lys Leu Ser Trp Thr Phe	
95 100 105	
ctg aac aag acc ctt cac cca ggt ggc atg gca gaa gga ggc tat ttt	385
Leu Asn Lys Thr Leu His Pro Gly Gly Met Ala Glu Gly Gly Tyr Phe	
110 115 120 125	
ttt gaa agg agc tgg ggc cac cgt gga gtt att gtt cat gtc atc gac	433
Phe Glu Arg Ser Trp Gly His Arg Gly Val Ile Val His Val Ile Asp	
130 135 140	
ccc aaa tca ggc aca gtc atc cat tct gac cgg ttt gac acc tat aga	481
Pro Lys Ser Gly Thr Val Ile His Ser Asp Arg Phe Asp Thr Tyr Arg	
145 150 155	
tcc aag aaa gag agt gaa cgt ctg gtc cag tat ttg aac gcg gtg ccc	529
Ser Lys Lys Glu Ser Glu Arg Leu Val Gln Tyr Leu Asn Ala Val Pro	
160 165 170	
gat ggc agg atc ctt tct gtt gca gtg aat gat gaa ggt tct cga aat	577
Asp Gly Arg Ile Leu Ser Val Ala Val Asn Asp Glu Gly Ser Arg Asn	
175 180 185	
ctg gat gac atg gcc agg aag gcg atg acc aaa ttg gga agc aaa cac	625
Leu Asp Asp Met Ala Arg Lys Ala Met Thr Lys Leu Gly Ser Lys His	
190 195 200 205	
ttc ctg cac ctt gga ttt aga cac cct tgg agt ttt cta act gtg aaa	673
Phe Leu His Leu Gly Phe Arg His Pro Trp Ser Phe Leu Thr Val Lys	
210 215 220	
gga aat cca tca tct tca gtg gaa gac cat att gaa tat cat gga cat	721
Gly Asn Pro Ser Ser Ser Val Glu Asp His Ile Glu Tyr His Gly His	
225 230 235	
cga ggc tct gct gct gcc cgg gta ttc aaa ttg ttc cag aca ctcgagggc	772
Arg Gly Ser Ala Ala Ala Arg Val Phe Lys Leu Phe Gln Thr	
240 245 250	

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<211> 251

<212> PRT

<213> Homo sapiens

<400> 126

His Val His Ile Gly Gln Gly Lys Thr Leu Leu Leu Thr Ser Ser Ala
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Thr Val Tyr Ser Ile His Ile Ser Glu Gly Gly Lys Leu Val Ile Lys
20 25 30

Asp His Asp Glu Pro Ile Val Leu Arg Thr Arg His Ile Leu Ile Asp
35 40 45

Asn Gly Gly Glu Leu His Ala Gly Ser Ala Leu Cys Pro Phe Gln Gly
50 55 60

Asn Phe Thr Ile Ile Leu Tyr Gly Arg Ala Asp Glu Gly Ile Gln Pro
65 70 75 80

Asp Pro Tyr Tyr Gly Leu Lys Tyr Ile Gly Val Gly Lys Gly Gly Ala
85 90 95
270

Leu Glu Leu His Gly Gln Lys Lys Leu Ser Trp Thr Phe Leu Asn Lys
 100 105 110
 Thr Leu His Pro Gly Gly Met Ala Glu Gly Gly Tyr Phe Phe Glu Arg
 115 120 125
 Ser Trp Gly His Arg Gly Val Ile Val His Val Ile Asp Pro Lys Ser
 130 135 140
 Gly Thr Val Ile His Ser Asp Arg Phe Asp Thr Tyr Arg Ser Lys Lys
 145 150 155 160
 Glu Ser Glu Arg Leu Val Gln Tyr Leu Asn Ala Val Pro Asp Gly Arg
 165 170 175
 Ile Leu Ser Val Ala Val Asn Asp Glu Gly Ser Arg Asn Leu Asp Asp
 180 185 190
 Met Ala Arg Lys Ala Met Thr Lys Leu Gly Ser Lys His Phe Leu His
 195 200 205
 Leu Gly Phe Arg His Pro Trp Ser Phe Leu Thr Val Lys Gly Asn Pro
 210 215 220
 Ser Ser Ser Val Glu Asp His Ile Glu Tyr His Gly His Arg Gly Ser
 225 230 235 240
 Ala Ala Ala Arg Val Phe Lys Leu Phe Gln Thr
 245 250

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 att tca gac ctc tgg aaa gct cac cca gga aaa ata tgc aat cgt ccc 97
 Ile Ser Asp Leu Trp Lys Ala His Pro Gly Lys Ile Cys Asn Arg Pro
 15 20 25
 att gat ata cag gcc act aca atg gat gga gtt aac ctc agc acc gag 145
 Ile Asp Ile Gln Ala Thr Thr Met Asp Gly Val Asn Leu Ser Thr Glu
 30 35 40 45
 gtt gtc tac aaa aaa ggc cag gat tat agg ttt gct tgc tac gac cgg 193
 Val Val Tyr Lys Lys Gly Gln Asp Tyr Arg Phe Ala Cys Tyr Asp Arg
 50 55 60
 ggc aga gcc tgc cgg agc tac cgt gta cgg ttc ctc tgt ggg aag cct 241
 Gly Arg Ala Cys Arg Ser Tyr Arg Val Arg Phe Leu Cys Gly Lys Pro
 65 70 75
 gtg agg ccc aaa ctc aca gtc acc att gac acc aat gtg aac agc acc 289
 Val Arg Pro Lys Leu Thr Val Thr Ile Asp Thr Asn Val Asn Ser Thr
 271

80				85				90								
att	ctg	aac	ttg	gag	gat	aat	gta	cag	tca	tgg	aaa	cct	gga	gat	acc	337
Ile	Leu	Asn	Leu	Glu	Asp	Asn	Val	Gln	Ser	Trp	Lys	Pro	Gly	Asp	Thr	
95				100				105								
ctg	gtc	att	gcc	agt	act	gat	tac	tcc	atg	tac	cag	gca	gaa	gag	ttc	385
Leu	Val	Ile	Ala	Ser	Thr	Asp	Tyr	Ser	Met	Tyr	Gln	Ala	Glu	Glu	Phe	
110				115				120				125				
cag	gtg	ctt	ccc	tgc	aga	tcc	tgc	gcc	ccc	aac	cag	gtc	aaa	gtg	gca	433
Gln	Val	Leu	Pro	Cys	Arg	Ser	Cys	Ala	Pro	Asn	Gln	Val	Lys	Val	Ala	
130				135				140								
ggg	aaa	cca	atg	tac	ctg	cac	atc	ggg	gag	gag	ata	gac	ggc	gtg	gac	481
Gly	Lys	Pro	Met	Tyr	Leu	His	Ile	Gly	Glu	Glu	Ile	Asp	Gly	Val	Asp	
145				150				155								
atg	cgg	gcg	gag	gtt	ggg	ctt	ctg	agc	cgg	aac	atc	ata	gtg	atg	ggg	529
Met	Arg	Ala	Glu	Val	Gly	Leu	Leu	Ser	Arg	Asn	Ile	Ile	Val	Met	Gly	
160				165				170								
gag	atg	gag	gac	aaa	tgc	tac	ccc	tac	aga	aac	cac	atc	tgc	aat	ttc	577
Glu	Met	Glu	Asp	Lys	Cys	Tyr	Pro	Tyr	Arg	Asn	His	Ile	Cys	Asn	Phe	
175				180				185								
ttt	gac	ttc	gat	acc	ttt	ggg	ggc	cac	atc	aag	ttt	gct	ctg	gga	ttt	625
Phe	Asp	Phe	Asp	Thr	Phe	Gly	Gly	His	Ile	Lys	Phe	Ala	Leu	Gly	Phe	
190				195				200				205				
aag	gca	gca	cac	ttg	gag	ggc	acg	gag	ctg	aag	cat	atg	gga	cag	cag	673
Lys	Ala	Ala	His	Leu	Glu	Gly	Thr	Glu	Leu	Lys	His	Met	Gly	Gln	Gln	
210				215				220								
ctg	gtg	ggt	cag	tac	ccg	att	cac	ttc	cac	ctg	gcc	ggt	gat	gta	gac	721
Leu	Val	Gly	Gln	Tyr	Pro	Ile	His	Phe	His	Leu	Ala	Gly	Asp	Val	Asp	
225				230				235								
gaa	agg	gga	ggt	tat	gac	cca	ccc	aca	tac	atc	agg	gac	ctc	tcc	atc	769
Glu	Arg	Gly	Gly	Tyr	Asp	Pro	Pro	Thr	Tyr	Ile	Arg	Asp	Leu	Ser	Ile	
240				245				250								
cat	cat	aca	ttc	tct	cgc	tgc	gtc	aca	gtc	cat	ggc	tcc	aat	ggc	ttg	817
His	His	Thr	Phe	Ser	Arg	Cys	Val	Thr	Val	His	Gly	Ser	Asn	Gly	Leu	
255				260				265								
ttg	atc	aag	gac	gtt	gtg	ggc	tat	aac	tct	ttg	ggc	cac	tgc	ttc	ttc	865
Leu	Ile	Lys	Asp	Val	Val	Gly	Tyr	Asn	Ser	Leu	Gly	His	Cys	Phe	Phe	
270				275				280				285				
acg	gaa	gat	ggg	ccg	gag	gaa	cgc	aac	act	ttt	gac	cac	tgc	ctt	ggc	913
Thr	Glu	Asp	Gly	Pro	Glu	Glu	Arg	Asn	Thr	Phe	Asp	His	Cys	Leu	Gly	
290				295				300								
ctc	ctt	gtc	aag	tct	gga	acc	ctc	ctc	ccc	tcg	gac	cgt	gac	agc	aag	961
Leu	Leu	Val	Lys	Ser	Gly	Thr	Leu	Leu	Pro	Ser	Asp	Arg	Asp	Ser	Lys	
305				310				315								
atg	tgc	aag	atg	atc	aca	gag	gac	tcc	tac	cca	ggg	tac	atc	ccc	aag	1009
Met	Cys	Lys	Met	Ile	Thr	Glu	Asp	Ser	Tyr	Pro	Gly	Tyr	Ile	Pro	Lys	

Pro Arg Gln Asp Cys Asn Ala Val Ser Thr Phe Trp Met Ala Asn Pro
 335 340 345

aac aac aac ctc atc aac tgt gcc gct gca gga tct gag gaa act gga 1105
 Asn Asn Asn Leu Ile Asn Cys Ala Ala Ala Gly Ser Glu Glu Thr Gly 365
 350 355 360

ttt tgg ttt att ttt cac cac gta cca acg ggc ccc tcc gtg gga atg 1153
 Phe Trp Phe Ile Phe His His Val Pro Thr Gly Pro Ser Val Gly Met 380
 370 375

tac tcc cca ggt tat tca gag cac att cca ctg gga aaa ttc tat aac 1201
 Tyr Ser Pro Gly Tyr Ser Glu His Ile Pro Leu Gly Lys Phe Tyr Asn 395
 385 390

aac cga gca cat tcc aac tac cgg gct ggc atg atc ata gac aac gga 1249
 Asn Arg Ala His Ser Asn Tyr Arg Ala Gly Met Ile Ile Asp Asn Gly 410
 400 405

gtc aaa acc acc gag gcc tct gcc aag gac aag cgg ccg ttc ctc tca 1297
 Val Lys Thr Thr Glu Ala Ser Ala Lys Asp Lys Arg Pro Phe Leu Ser 425
 415 420

atc ctcgagggc 1309
 Ile
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<210> 128
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Gln Ala Thr Thr Met Asp Gly Val Asn Leu Ser Thr Glu Val Val Tyr
 35 40 45

Lys Lys Gly Gln Asp Tyr Arg Phe Ala Cys Tyr Asp Arg Gly Arg Ala
 50 55 60

Cys Arg Ser Tyr Arg Val Arg Phe Leu Cys Gly Lys Pro Val Arg Pro
 65 70 75 80

Lys Leu Thr Val Thr Ile Asp Thr Asn Val Asn Ser Thr Ile Leu Asn
 85 90 95

Leu Glu Asp Asn Val Gln Ser Trp Lys Pro Gly Asp Thr Leu Val Ile
 100 105 110

Ala Ser Thr Asp Tyr Ser Met Tyr Gln Ala Glu Glu Phe Gln Val Leu
 115 120 125

Pro Cys Arg Ser Cys Ala Pro Asn Gln Val Lys Val Ala Gly Lys Pro
 130 135 140

Met Tyr Leu His Ile Gly Glu Glu Ile Asp Gly Val Asp Met Arg Ala
 145 150 155 160

Glu Val Gly Leu Leu Ser Arg Asn Ile Ile Val Met Gly Glu Met Glu
 165 170 175
 Asp Lys Cys Tyr Pro Tyr Arg Asn His Ile Cys Asn Phe Phe Asp Phe
 180 185 190
 Asp Thr Phe Gly Gly His Ile Lys Phe Ala Leu Gly Phe Lys Ala Ala
 195 200 205
 His Leu Glu Gly Thr Glu Leu Lys His Met Gly Gln Gln Leu Val Gly
 210 215 220
 Gln Tyr Pro Ile His Phe His Leu Ala Gly Asp Val Asp Glu Arg Gly
 225 230 235 240
 Gly Tyr Asp Pro Pro Thr Tyr Ile Arg Asp Leu Ser Ile His His Thr
 245 250 255
 Phe Ser Arg Cys Val Thr Val His Gly Ser Asn Gly Leu Leu Ile Lys
 260 265 270
 Asp Val Val Gly Tyr Asn Ser Leu Gly His Cys Phe Phe Thr Glu Asp
 275 280 285
 Gly Pro Glu Glu Arg Asn Thr Phe Asp His Cys Leu Gly Leu Leu Val
 290 295 300
 Lys Ser Gly Thr Leu Leu Pro Ser Asp Arg Asp Ser Lys Met Cys Lys
 305 310 315 320
 Met Ile Thr Glu Asp Ser Tyr Pro Gly Tyr Ile Pro Lys Pro Arg Gln
 325 330 335
 Asp Cys Asn Ala Val Ser Thr Phe Trp Met Ala Asn Pro Asn Asn Asn
 340 345 350
 Leu Ile Asn Cys Ala Ala Ala Gly Ser Glu Glu Thr Gly Phe Trp Phe
 355 360 365
 Ile Phe His His Val Pro Thr Gly Pro Ser Val Gly Met Tyr Ser Pro
 370 375 380
 Gly Tyr Ser Glu His Ile Pro Leu Gly Lys Phe Tyr Asn Asn Arg Ala
 385 390 395 400
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 405 410 415
 Thr Glu Ala Ser Ala Lys Asp Lys Arg Pro Phe Leu Ser Ile
 420 425 430

<210> 129

<211> 1081

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (11)..(1072)

<400> 129

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 274

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aat	gac	ttc	ccc	agc	cac	cct	ctt	tac	ctg	gag	ggg	gcg	ctc	acc	agg	97			
Asn	Asp	Phe	Pro	Ser	His	Pro	Leu	Tyr	Leu	Glu	Gly	Ala	Leu	Thr	Arg				
15					20					25									
agc	acc	cat	tac	cag	caa	tac	caa	ccg	gtt	gtc	acc	ctg	cag	aag	ggc	145			
Ser	Thr	His	Tyr	Gln	Gln	Tyr	Gln	Pro	Val	Val	Thr	Leu	Gln	Lys	Gly				
30					35					40					45				
tac	acc	atc	cac	tgg	gac	cag	acg	gcc	ccc	gcc	gaa	ctc	gcc	atc	tgg	193			
Tyr	Thr	Ile	His	Trp	Asp	Gln	Thr	Ala	Pro	Ala	Glu	Leu	Ala	Ile	Trp				
50					55					60									
ctc	atc	aac	ttc	aac	aag	ggc	gac	tgg	atc	cga	gtg	ggg	ctc	tgc	tac	241			
Leu	Ile	Asn	Phe	Asn	Lys	Gly	Asp	Trp	Ile	Arg	Val	Gly	Leu	Cys	Tyr				
65					70					75									
ccg	cga	ggc	acc	aca	ttc	tcc	atc	ctc	tcg	gat	gtt	cac	aat	cgc	ctg	289			
Pro	Arg	Gly	Thr	Thr	Phe	Ser	Ile	Leu	Ser	Asp	Val	His	Asn	Arg	Leu				
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Leu	Lys	Gln	Thr	Ser	Lys	Thr	Gly	Val	Phe	Val	Arg	Thr	Leu	Gln	Met				
95					100					105									
gac	aaa	gtg	gag	cag	agc	tac	cct	ggc	agg	agc	cac	tac	tac	tgg	gac	385			
Asp	Lys	Val	Glu	Gln	Ser	Tyr	Pro	Gly	Arg	Ser	His	Tyr	Tyr	Trp	Asp				
110					115					120					125				
gag	gac	tca	ggg	ctg	ttg	ttc	ctg	aag	ctg	aaa	gct	cag	aac	gag	aga	433			
Glu	Asp	Ser	Gly	Leu	Leu	Phe	Leu	Lys	Leu	Lys	Ala	Gln	Asn	Glu	Arg				
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Glu	Lys	Phe	Ala	Phe	Cys	Ser	Met	Lys	Gly	Cys	Glu	Arg	Ile	Lys	Ile				
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Lys	Ala	Leu	Ile	Pro	Lys	Asn	Ala	Gly	Val	Ser	Asp	Cys	Thr	Ala	Thr				
160					165					170									
gct	tac	ccc	aag	ttc	acc	gag	agg	gct	gtc	gta	gac	gtg	ccg	atg	ccc	577			
Ala	Tyr	Pro	Lys	Phe	Thr	Glu	Arg	Ala	Val	Val	Asp	Val	Pro	Met	Pro				
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Val	Lys	Met	Glu	Ser	Ser	Lys	Gln	His	Phe	Phe	His	Leu	Trp	Asn	Asp				
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Phe	Ala	Tyr	Ile	Glu	Val	Asp	Gly	Lys	Lys	Tyr	Pro	Ser	Ser	Glu	Asp				
225					230					235									
ggc	atc	cag	gtg	gtg	gtg	att	gac	ggg	aac	caa	ggg	cgc	gtg	gtg	agc	769			
Gly	Ile	Gln	Val	Val	Val	Ile	Asp	Gly	Asn	Gln	Gly	Arg	Val	Val	Ser				
240					245					250									
cac	acg	agc	ttc	agg	aac	tcc	att	ctg	caa	ggc	ata	cca	tgg	cag	ctt	817			
275																			

His Thr Ser Phe Arg Asn Ser Ile Leu Gln Gly Ile Pro Trp Gln Leu
 255 260 265

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 Phe Asn Tyr Val Ala Thr Ile Pro Asp Asn Ser Ile Val Leu Met Ala
 270 275 280 285

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 Ser Lys Gly Arg Tyr Val Ser Arg Gly Pro Trp Thr Arg Val Leu Glu
 290 295 300

aag ctt ggg gca gac agg ggt ctc aag ttg aaa gag caa atg gca ttc 961
 Lys Leu Gly Ala Asp Arg Gly Leu Lys Leu Lys Glu Gln Met Ala Phe
 305 310 315

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 Val Gly Phe Lys Gly Ser Phe Arg Pro Ile Trp Val Thr Leu Asp Thr
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 His Trp Asp Gln Thr Ala Pro Ala Glu Leu Ala Ile Trp Leu Ile Asn
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 Phe Asn Lys Gly Asp Trp Ile Arg Val Gly Leu Cys Tyr Pro Arg Gly
 65 70 75 80
 Thr Thr Phe Ser Ile Leu Ser Asp Val His Asn Arg Leu Leu Lys Gln
 85 90 95
 Thr Ser Lys Thr Gly Val Phe Val Arg Thr Leu Gln Met Asp Lys Val
 100 105 110
 Glu Gln Ser Tyr Pro Gly Arg Ser His Tyr Tyr Trp Asp Glu Asp Ser
 115 120 125
 Gly Leu Leu Phe Leu Lys Leu Lys Ala Gln Asn Glu Arg Glu Lys Phe
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 Ala Phe Cys Ser Met Lys Gly Cys Glu Arg Ile Lys Ile Lys Ala Leu
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Ile	Pro	Lys	Asn	Ala	Gly	Val	Ser	Asp	Cys	Thr	Ala	Thr	Ala	Tyr	Pro	165	170	175
Lys	Phe	Thr	Glu	Arg	Ala	Val	Val	Asp	Val	Pro	Met	Pro	Lys	Lys	Leu	180	185	190
Phe	Gly	Ser	Gln	Leu	Lys	Thr	Lys	Asp	His	Phe	Leu	Glu	Val	Lys	Met	195	200	205
Glu	Ser	Ser	Lys	Gln	His	Phe	Phe	His	Leu	Trp	Asn	Asp	Phe	Ala	Tyr	210	215	220
Ile	Glu	Val	Asp	Gly	Lys	Lys	Tyr	Pro	Ser	Ser	Glu	Asp	Gly	Ile	Gln	225	230	235
Val	Val	Val	Ile	Asp	Gly	Asn	Gln	Gly	Arg	Val	Val	Ser	His	Thr	Ser	245	250	255
Phe	Arg	Asn	Ser	Ile	Leu	Gln	Gly	Ile	Pro	Trp	Gln	Leu	Phe	Asn	Tyr	260	265	270
Val	Ala	Thr	Ile	Pro	Asp	Asn	Ser	Ile	Val	Leu	Met	Ala	Ser	Lys	Gly	275	280	285
Arg	Tyr	Val	Ser	Arg	Gly	Pro	Trp	Thr	Arg	Val	Leu	Glu	Lys	Leu	Gly	290	295	300
Ala	Asp	Arg	Gly	Leu	Lys	Leu	Lys	Glu	Gln	Met	Ala	Phe	Val	Gly	Phe	305	310	315
Lys	Gly	Ser	Phe	Arg	Pro	Ile	Trp	Val	Thr	Leu	Asp	Thr	Glu	Asp	His	325	330	335
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Lys Leu

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 Ala Met Leu Thr Ile Ser Trp Leu Thr Leu Thr Cys Phe Pro Gly Ala
 15 20 25

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 Thr Ser Thr Val Ala Ala Gly Cys Pro Asp Gln Ser Pro Glu Leu Gln
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ccc tgg aac cct ggc cat gac caa gac cac cat gtg cat atc ggc cag 196
 Pro Trp Asn Pro Gly His Asp Gln Asp His His Val His Ile Gly Gln
 277

45	50	55	60	
ggc aag aca ctg ctg ctc acc tct tct gcc acg gtc tat tcc atc cac				244
Gly Lys Thr Leu Leu Leu Thr Ser Ser Ala Thr Val Tyr Ser Ile His				
	65	70	75	
atc tca gag gga ggc aag ctg gtc att aaa gac cac gac gag ccg att				292
Ile Ser Glu Gly Gly Lys Leu Val Ile Lys Asp His Asp Glu Pro Ile				
	80	85	90	
gtt ttg cga acc cgg cac atc ctg att gac aac gga gga gag ctg cat				340
Val Leu Arg Thr Arg His Ile Leu Ile Asp Asn Gly Gly Glu Leu His				
	95	100	105	
gct ggg agt gcc ctc tgc cct ttc cag ggc aat ttc acc atc att ttg				388
Ala Gly Ser Ala Leu Cys Pro Phe Gln Gly Asn Phe Thr Ile Ile Leu				
	110	115	120	
tat gga agg gct gat gaa ggt att cag ccg gat cct tac tat ggt ctg				436
Tyr Gly Arg Ala Asp Glu Gly Ile Gln Pro Asp Pro Tyr Tyr Gly Leu				
	125	130	135	140
aag tac att ggg gtt ggt aaa gga ggc gct ctt gag ttg cat gga cag				484
Lys Tyr Ile Gly Val Gly Lys Gly Gly Ala Leu Glu Leu His Gly Gln				
	145	150	155	
aaa aaa ctc tcc tgg aca ttt ctg aac aag acc ctt cac cca ggt ggc				532
Lys Lys Leu Ser Trp Thr Phe Leu Asn Lys Thr Leu His Pro Gly Gly				
	160	165	170	
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Met Ala Glu Gly Gly Tyr Phe Phe Glu Arg Ser Trp Gly His Arg Gly				
	175	180	185	
gtt att gtt cat gtc atc gac ccc aaa tca ggc aca gtc atc cat tct				628
Val Ile Val His Val Ile Asp Pro Lys Ser Gly Thr Val Ile His Ser				
	190	195	200	
gac cgg ttt gac acc tat aga tcc aag aaa gag agt gaa cgt ctg gtc				676
Asp Arg Phe Asp Thr Tyr Arg Ser Lys Lys Glu Ser Glu Arg Leu Val				
	205	210	215	220
cag tat ttg aac gcg gtg ccc gat ggc agg atc ctt tct gtt gca gtg				724
Gln Tyr Leu Asn Ala Val Pro Asp Gly Arg Ile Leu Ser Val Ala Val				
	225	230	235	
aat gat gaa ggt tct cga aat ctg gat gac atg gcc agg aag gcg atg				772
Asn Asp Glu Gly Ser Arg Asn Leu Asp Asp Met Ala Arg Lys Ala Met				
	240	245	250	
acc aaa ttg gga agc aaa cac ttc ctg cac ctt gga ttt aga cac cct				820
Thr Lys Leu Gly Ser Lys His Phe Leu His Leu Gly Phe Arg His Pro				
	255	260	265	
tgg agt ttt cta act gtg aaa gga aat cca tca tct tca gtg gaa gac				868
Trp Ser Phe Leu Thr Val Lys Gly Asn Pro Ser Ser Ser Val Glu Asp				
	270	275	280	
cat att gaa tat cat gga cat cga ggc tct gct gct gcc cgg gta ttc				916
His Ile Glu Tyr His Gly His Arg Gly Ser Ala Ala Ala Arg Val Phe				
	285	290	295	300
aaa ttg ttc cag aca gag cat ggc gaa tat ttc aat gtt tct ttg tcc				964
		278		

Lys	Leu	Phe	Gln	Thr	Glu	His	Gly	Glu	Tyr	Phe	Asn	Val	Ser	Leu	Ser		
				305					310					315			
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Ser	Glu	Trp	Val	Gln	Asp	Val	Glu	Trp	Thr	Glu	Trp	Phe	Asp	His	Asp		
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Lys	Val	Ser	Gln	Thr	Lys	Gly	Gly	Glu	Lys	Ile	Ser	Asp	Leu	Trp	Lys		
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Ala	His	Pro	Gly	Lys	Ile	Cys	Asn	Arg	Pro	Ile	Asp	Ile	Gln	Ala	Thr		
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aca	atg	gat	gga	gtt	aac	ctc	agc	acc	gag	gtt	gtc	tac	aaa	aaa	ggc	1156	
Thr	Met	Asp	Gly	Val	Asn	Leu	Ser	Thr	Glu	Val	Val	Tyr	Lys	Lys	Gly		
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Gln	Asp	Tyr	Arg	Phe	Ala	Cys	Tyr	Asp	Arg	Gly	Arg	Ala	Cys	Arg	Ser		
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Tyr	Arg	Val	Arg	Phe	Leu	Cys	Gly	Lys	Pro	Val	Arg	Pro	Lys	Leu	Thr		
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Asn	Val	Gln	Ser	Trp	Lys	Pro	Gly	Asp	Thr	Leu	Val	Ile	Ala	Ser	Thr		
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Asp	Tyr	Ser	Met	Tyr	Gln	Ala	Glu	Glu	Phe	Gln	Val	Leu	Pro	Cys	Arg		
tcc	tgc	gcc	ccc	aac	cag	gtc	aaa	gtg	gca	ggg	aaa	cca	atg	tac	ctg	1444	
Ser	Cys	Ala	Pro	Asn	Gln	Val	Lys	Val	Ala	Gly	Lys	Pro	Met	Tyr	Leu		
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His	Ile	Gly	Glu	Glu	Ile	Asp	Gly	Val	Asp	Met	Arg	Ala	Glu	Val	Gly		
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Tyr	Pro	Tyr	Arg	Asn	His	Ile	Cys	Asn	Phe	Phe	Asp	Phe	Asp	Thr	Phe		
ggg	ggc	cac	atc	aag	ttt	gct	ctg	gga	ttt	aag	gca	gca	cac	ttg	gag	1636	
Gly	Gly	His	Ile	Lys	Phe	Ala	Leu	Gly	Phe	Lys	Ala	Ala	His	Leu	Glu		
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Gly	Thr	Glu	Leu	Lys	His	Met	Gly	Gln	Gln	Leu	Val	Gly	Gln	Tyr	Pro		

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cca ccc aca tac atc agg gac ctc tcc atc cat cat aca ttc tct cgc Pro Pro Thr Tyr Ile Arg Asp Leu Ser Ile His His Thr Phe Ser Arg 575 580 585	1780
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cac gta cca acg ggc ccc tcc gtg gga atg tac tcc cca ggt tat tca His Val Pro Thr Gly Pro Ser Val Gly Met Tyr Ser Pro Gly Tyr Ser 705 710 715	2164
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tct gcc aag gac aag cgg ccg ttc ctc tca atc atc tct gcc aga tac Ser Ala Lys Asp Lys Arg Pro Phe Leu Ser Ile Ile Ser Ala Arg Tyr 750 755 760	2308
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Val Gly Thr Glu Met Met Asp Asn Arg Ile Trp Gly Pro Gly Gly Leu	
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Asp His Ser Gly Arg Thr Leu Pro Ile Gly Gln Asn Phe Pro Ile Arg	
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Arg Lys Phe Val Ala Leu Glu Gly Arg His Thr Ser Ala Leu Ala Phe	
895 900 905	
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Arg Leu Asn Asn Ala Trp Gln Ser Cys Pro His Asn Asn Val Thr Gly	
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925 930 935 940	
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Pro Gly Pro Trp Phe Asn Gln Leu Asp Met Asp Gly Asp Lys Thr Ser	
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Val Phe His Asp Val Asp Gly Ser Val Ser Glu Tyr Pro Gly Ser Tyr	
960 965 970	
ctc acg aag aat gac aac tgg ctg gtc cgg cac cca gac tgc atc aat	2980
Leu Thr Lys Asn Asp Asn Trp Leu Val Arg His Pro Asp Cys Ile Asn	
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281	

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tca aag gga aga tac gtc tcc aga ggc cca tgg acc aga gtg ctg gaa Ser Lys Gly Arg Tyr Val Ser Arg Gly Pro Trp Thr Arg Val Leu Glu 1295 1300 1305			3940
aag ctt ggg gca gac agg ggt ctc aag ttg aaa gag caa atg gca ttc 282			3988

Lys Leu Gly Ala Asp Arg Gly Leu Lys Leu Lys Glu Gln Met Ala Phe
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 Val Gly Phe Lys Gly Ser Phe Arg Pro Ile Trp Val Thr Leu Asp Thr
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 gag gat cac aaa gcc aaa atc ttc caa gtt gtg ccc atc cct gtg gtg 4084
 Glu Asp His Lys Ala Lys Ile Phe Gln Val Val Pro Ile Pro Val Val
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 Gly His Asp Gln Asp His His Val His Ile Gly Gln Gly Lys Thr Leu
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 Leu Leu Thr Ser Ser Ala Thr Val Tyr Ser Ile His Ile Ser Glu Gly
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 Gly Lys Leu Val Ile Lys Asp His Asp Glu Pro Ile Val Leu Arg Thr
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 Arg His Ile Leu Ile Asp Asn Gly Gly Glu Leu His Ala Gly Ser Ala
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 Leu Cys Pro Phe Gln Gly Asn Phe Thr Ile Ile Leu Tyr Gly Arg Ala
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 Asp Glu Gly Ile Gln Pro Asp Pro Tyr Tyr Gly Leu Lys Tyr Ile Gly
 130 135 140
 Val Gly Lys Gly Gly Ala Leu Glu Leu His Gly Gln Lys Lys Leu Ser
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 Trp Thr Phe Leu Asn Lys Thr Leu His Pro Gly Gly Met Ala Glu Gly
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 Gly Tyr Phe Phe Glu Arg Ser Trp Gly His Arg Gly Val Ile Val His
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 Val Ile Asp Pro Lys Ser Gly Thr Val Ile His Ser Asp Arg Phe Asp
 195 200 205
 Thr Tyr Arg Ser Lys Lys Glu Ser Glu Arg Leu Val Gln Tyr Leu Asn
 210 215 220

Ala Val Pro Asp Gly Arg Ile Leu Ser Val	Ala Val Asn Asp Glu Gly
225	235 240
Ser Arg Asn Leu Asp Asp Met Ala Arg Lys	Ala Met Thr Lys Leu Gly
245	250 255
Ser Lys His Phe Leu His Leu Gly Phe Arg His Pro Trp Ser Phe Leu	
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Thr Val Lys Gly Asn Pro Ser Ser Ser Val Glu Asp His Ile Glu Tyr	
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His Gly His Arg Gly Ser Ala Ala Ala Arg Val Phe Lys Leu Phe Gln	
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Thr Glu His Gly Glu Tyr Phe Asn Val Ser Leu Ser Ser Glu Trp Val	
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Gln Asp Val Glu Trp Thr Glu Trp Phe Asp His Asp Lys Val Ser Gln	
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Thr Lys Gly Gly Glu Lys Ile Ser Asp Leu Trp Lys Ala His Pro Gly	
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Lys Ile Cys Asn Arg Pro Ile Asp Ile Gln Ala Thr Thr Met Asp Gly	
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Val Asn Leu Ser Thr Glu Val Val Tyr Lys Lys Gly Gln Asp Tyr Arg	
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Phe Ala Cys Tyr Asp Arg Gly Arg Ala Cys Arg Ser Tyr Arg Val Arg	
385	390 395 400
Phe Leu Cys Gly Lys Pro Val Arg Pro Lys Leu Thr Val Thr Ile Asp	
405	410 415
Thr Asn Val Asn Ser Thr Ile Leu Asn Leu Glu Asp Asn Val Gln Ser	
420	425 430
Trp Lys Pro Gly Asp Thr Leu Val Ile Ala Ser Thr Asp Tyr Ser Met	
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Tyr Gln Ala Glu Glu Phe Gln Val Leu Pro Cys Arg Ser Cys Ala Pro	
450	455 460
Asn Gln Val Lys Val Ala Gly Lys Pro Met Tyr Leu His Ile Gly Glu	
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Glu Ile Asp Gly Val Asp Met Arg Ala Glu Val Gly Leu Leu Ser Arg	
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Asn Ile Ile Val Met Gly Glu Met Glu Asp Lys Cys Tyr Pro Tyr Arg	
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Asn His Ile Cys Asn Phe Phe Asp Phe Asp Thr Phe Gly Gly His Ile	
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Lys Phe Ala Leu Gly Phe Lys Ala Ala His Leu Glu Gly Thr Glu Leu	
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Lys His Met Gly Gln Gln Leu Val Gly Gln Tyr Pro Ile His Phe His	
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 Ile Arg Asp Leu Ser Ile His His Thr Phe Ser Arg Cys Val Thr Val
 580 585 590
 His Gly Ser Asn Gly Leu Leu Ile Lys Asp Val Val Gly Tyr Asn Ser
 595 600 605
 Leu Gly His Cys Phe Phe Thr Glu Asp Gly Pro Glu Glu Arg Asn Thr
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 Phe Asp His Cys Leu Gly Leu Leu Val Lys Ser Gly Thr Leu Leu Pro
 625 630 635 640
 Ser Asp Arg Asp Ser Lys Met Cys Lys Met Ile Thr Glu Asp Ser Tyr
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 Pro Gly Tyr Ile Pro Lys Pro Arg Gln Asp Cys Asn Ala Val Ser Thr
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 Phe Trp Met Ala Asn Pro Asn Asn Asn Leu Ile Asn Cys Ala Ala Ala
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 Gly Ser Glu Glu Thr Gly Phe Trp Phe Ile Phe His His Val Pro Thr
 690 695 700
 Gly Pro Ser Val Gly Met Tyr Ser Pro Gly Tyr Ser Glu His Ile Pro
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 Leu Gly Lys Phe Tyr Asn Asn Arg Ala His Ser Asn Tyr Arg Ala Gly
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 Met Ile Ile Asp Asn Gly Val Lys Thr Thr Glu Ala Ser Ala Lys Asp
 740 745 750
 Lys Arg Pro Phe Leu Ser Ile Ile Ser Ala Arg Tyr Ser Pro His Gln
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 Met Met Asp Asn Arg Ile Trp Gly Pro Gly Gly Leu Asp His Ser Gly
 850 855 860
 Arg Thr Leu Pro Ile Gly Gln Asn Phe Pro Ile Arg Gly Ile Gln Leu
 865 870 875 880
 Tyr Asp Gly Pro Ile Asn Ile Leu Asn Cys Thr Phe Arg Lys Phe Val
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Ala Leu Glu Gly Arg His Thr Ser Ala Leu Ala Phe Arg Leu Asn Asn	900	905	910
Ala Trp Gln Ser Cys Pro His Asn Asn Val Thr Gly Ile Ala Phe Glu	915	920	925
Asp Val Pro Ile Thr Ser Arg Val Phe Phe Gly Glu Pro Gly Pro Trp	930	935	940
Phe Asn Gln Leu Asp Met Asp Gly Asp Lys Thr Ser Val Phe His Asp	945	950	955
Val Asp Gly Ser Val Ser Glu Tyr Pro Gly Ser Tyr Leu Thr Lys Asn	965	970	975
Asp Asn Trp Leu Val Arg His Pro Asp Cys Ile Asn Val Pro Asp Trp	980	985	990
Arg Gly Ala Ile Cys Ser Gly Cys Tyr Ala Gln Met Tyr Ile Gln Ala	995	1000	1005
Tyr Lys Thr Ser Asn Leu Arg Met Lys Ile Ile Lys Asn Asp Phe Pro	1010	1015	1020
Ser His Pro Leu Tyr Leu Glu Gly Ala Leu Thr Arg Ser Thr His Tyr	1025	1030	1035
Gln Gln Tyr Gln Pro Val Val Thr Leu Gln Lys Gly Tyr Thr Ile His	1045	1050	1055
Trp Asp Gln Thr Ala Pro Ala Glu Leu Ala Ile Trp Leu Ile Asn Phe	1060	1065	1070
Asn Lys Gly Asp Trp Ile Arg Val Gly Leu Cys Tyr Pro Arg Gly Thr	1075	1080	1085
Thr Phe Ser Ile Leu Ser Asp Val His Asn Arg Leu Leu Lys Gln Thr	1090	1095	1100
Ser Lys Thr Gly Val Phe Val Arg Thr Leu Gln Met Asp Lys Val Glu	1105	1110	1115
Gln Ser Tyr Pro Gly Arg Ser His Tyr Tyr Trp Asp Glu Asp Ser Gly	1125	1130	1135
Leu Leu Phe Leu Lys Leu Lys Ala Gln Asn Glu Arg Glu Lys Phe Ala	1140	1145	1150
Phe Cys Ser Met Lys Gly Cys Glu Arg Ile Lys Ile Lys Ala Leu Ile	1155	1160	1165
Pro Lys Asn Ala Gly Val Ser Asp Cys Thr Ala Thr Ala Tyr Pro Lys	1170	1175	1180
Phe Thr Glu Arg Ala Val Val Asp Val Pro Met Pro Lys Lys Leu Phe	1185	1190	1195
Gly Ser Gln Leu Lys Thr Lys Asp His Phe Leu Glu Val Lys Met Glu	1205	1210	1215
Ser Ser Lys Gln His Phe Phe His Leu Trp Asn Asp Phe Ala Tyr Ile	1220	1225	1230

Glu Val Asp Gly Lys Lys Tyr Pro Ser Ser Glu Asp Gly Ile Gln Val
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 Ala Thr Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser Lys Gly Arg
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 Gln Ala Thr Thr Met Asp Gly Val Asn Leu Ser Thr Glu Val Val Tyr
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 Lys Lys Gly Gln Asp Tyr Arg Phe Ala Cys Tyr Asp Arg Gly Arg Ala
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 Cys Arg Ser Tyr Arg Val Arg Phe Leu Cys Gly Lys Pro Val Arg Pro
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 Lys Leu Thr Val Thr Ile Asp Thr Asn Val Asn Ser Thr Ile Leu Asn
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 Leu Glu Asp Asn Val Gln Ser Trp Lys Pro Gly Asp Thr Leu Val Ile
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 gcc agt act gat tac tcc atg tac cag gca gaa gag ttc cag gtg ctt 337
 Ala Ser Thr Asp Tyr Ser Met Tyr Gln Ala Glu Glu Phe Gln Val Leu
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Pro Cys Arg Ser Cys Ala Pro Asn Gln Val Lys Val Ala Gly Lys Pro			
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Met Tyr Leu His Ile Gly Glu Glu Ile Asp Gly Val Asp Met Arg Ala			
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Glu Val Gly Leu Leu Ser Arg Asn Ile Ile Val Met Gly Glu Met Glu			
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Asp Lys Cys Tyr Pro Tyr Arg Asn His Ile Cys Asn Phe Phe Asp Phe			
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Asp Thr Phe Gly Gly His Ile Lys Phe Ala Leu Gly Phe Lys Ala Ala			
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His Leu Glu Gly Thr Glu Leu Lys His Met Gly Gln Gln Leu Val Gly			
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Gln Tyr Pro Ile His Phe His Leu Ala Gly Asp Val Asp Glu Arg Gly			
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Gly Tyr Asp Pro Pro Thr Tyr Ile Arg Asp Leu Ser Ile His His Thr			
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Phe Ser Arg Cys Val Thr Val His Gly Ser Asn Gly Leu Leu Ile Lys			
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Leu Ile Asn Cys Ala Ala Ala Gly Ser Glu Glu Thr Gly Phe Trp Phe			
335 340 345			
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288			

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Gly	Tyr	Ser	Glu	His	Ile	Pro	Leu	Gly	Lys	Phe	Tyr	Asn	Asn	Arg	Ala		
				370					375					380			
cat	tcc	aac	tac	cgg	gct	ggc	atg	atc	ata	gac	aac	gga	gtc	aaa	acc	1201	
His	Ser	Asn	Tyr	Arg	Ala	Gly	Met	Ile	Ile	Asp	Asn	Gly	Val	Lys	Thr		
			385					390					395				
acc	gag	gcc	tct	gcc	aag	gac	aag	cgg	ccg	ttc	ctc	tca	atc	atc	tct	1249	
Thr	Glu	Ala	Ser	Ala	Lys	Asp	Lys	Arg	Pro	Phe	Leu	Ser	Ile	Ile	Ser		
		400					405					410					
gcc	aga	tac	agc	cct	cac	cag	gac	gcc	gac	ccg	ctg	aag	ccc	cgg	gag	1297	
Ala	Arg	Tyr	Ser	Pro	His	Gln	Asp	Ala	Asp	Pro	Leu	Lys	Pro	Arg	Glu		
	415					420					425						
ccg	gcc	atc	atc	aga	cac	ttc	att	gcc	tac	aag	aac	cag	gac	cac	ggg	1345	
Pro	Ala	Ile	Ile	Arg	His	Phe	Ile	Ala	Tyr	Lys	Asn	Gln	Asp	His	Gly		
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gcc	tgg	ctg	cgc	ggc	ggg	gat	gtg	tgg	ctg	gac	agc	tgc	cgg	ttt	gct	1393	
Ala	Trp	Leu	Arg	Gly	Gly	Asp	Val	Trp	Leu	Asp	Ser	Cys	Arg	Phe	Ala		
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gac	aat	ggc	att	ggc	ctg	acc	ctg	gcc	agt	ggg	gga	acc	ttc	ccg	tat	1441	
Asp	Asn	Gly	Ile	Gly	Leu	Thr	Leu	Ala	Ser	Gly	Gly	Thr	Phe	Pro	Tyr		
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gac	gac	ggc	tcc	aag	caa	gag	ata	aag	aac	agc	ttg	ttt	gtt	ggc	gag	1489	
Asp	Asp	Gly	Ser	Lys	Gln	Glu	Ile	Lys	Asn	Ser	Leu	Phe	Val	Gly	Glu		
		480					485					490					
agt	ggc	aac	gtg	ggg	acg	gaa	atg	atg	gac	aat	agg	atc	tgg	ggc	cct	1537	
Ser	Gly	Asn	Val	Gly	Thr	Glu	Met	Met	Asp	Asn	Arg	Ile	Trp	Gly	Pro		
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Gly	Gly	Leu	Asp	His	Ser	Gly	Arg	Thr	Leu	Pro	Ile	Gly	Gln	Asn	Phe		
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cca	att	aga	gga	att	cag	tta	tat	gat	ggc	ccc	atc	aac	atc	caa	aac	1633	
Pro	Ile	Arg	Gly	Ile	Gln	Leu	Tyr	Asp	Gly	Pro	Ile	Asn	Ile	Gln	Asn		
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tgc	act	ttc	cga	aag	ttt	gtg	gcc	ctg	gag	ggc	cgg	cac	acc	agc	gcc	1681	
Cys	Thr	Phe	Arg	Lys	Phe	Val	Ala	Leu	Glu	Gly	Arg	His	Thr	Ser	Ala		
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ctg	gcc	ttc	cgc	ctg	aat	aat	gcc	tgg	cag	agc	tgc	ccc	cat	aac	aac	1729	
Leu	Ala	Phe	Arg	Leu	Asn	Asn	Ala	Trp	Gln	Ser	Cys	Pro	His	Asn	Asn		
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gtg	acc	ggc	att	gcc	ttt	gag	gac	gtt	ccg	att	act	tcc	aga	gtg	ttc	1777	
Val	Thr	Gly	Ile	Ala	Phe	Glu	Asp	Val	Pro	Ile	Thr	Ser	Arg	Val	Phe		
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ttc	gga	gag	cct	ggg	ccc	tgg	ttc	aac	cag	ctg	gac	atg	gat	ggg	gat	1825	
Phe	Gly	Glu	Pro	Gly	Pro	Trp	Phe	Asn	Gln	Leu	Asp	Met	Asp	Gly	Asp		
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Lys Thr Ser Val Phe His Asp Val Asp Gly Ser Val Ser Glu Tyr Pro	
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Gly Ser Tyr Leu Thr Lys Asn Asp Asn Trp Leu Val Arg His Pro Asp	
625 630 635	
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Cys Ile Asn Val Pro Asp Trp Arg Gly Ala Ile Cys Ser Gly Cys Tyr	
640 645 650	
gca cag atg tac att caa gcc tac aag acc agt aac ctg cga atg aag	2017
Ala Gln Met Tyr Ile Gln Ala Tyr Lys Thr Ser Asn Leu Arg Met Lys	
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Ile Ile Lys Asn Asp Phe Pro Ser His Pro Leu Tyr Leu Glu Gly Ala	
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Gln Lys Gly Tyr Thr Ile His Trp Asp Gln Thr Ala Pro Ala Glu Leu	
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Ala Ile Trp Leu Ile Asn Phe Asn Lys Gly Asp Trp Ile Arg Val Gly	
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Leu Gln Met Asp Lys Val Glu Gln Ser Tyr Pro Gly Arg Ser His Tyr	
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Tyr Trp Asp Glu Asp Ser Gly Leu Leu Phe Leu Lys Leu Lys Ala Gln	
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Thr Ala Thr Ala Tyr Pro Lys Phe Thr Glu Arg Ala Val Val Asp Val	
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ccg atg ccc aag aag ctc ttt ggt tct cag ctg aaa aca aag gac cat	2593
Pro Met Pro Lys Lys Leu Phe Gly Ser Gln Leu Lys Thr Lys Asp His	
850 855 860	
290	

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Phe Leu Glu Val Lys Met Glu Ser Ser Lys Gln His Phe Phe His Leu	
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Trp Asn Asp Phe Ala Tyr Ile Glu Val Asp Gly Lys Lys Tyr Pro Ser	
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Val Val Ser His Thr Ser Phe Arg Asn Ser Ile Leu Gln Gly Ile Pro	
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Trp Gln Leu Phe Asn Tyr Val Ala Thr Ile Pro Asp Asn Ser Ile Val	
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960 965 970	
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		115					120					125									
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Ile	Arg	Asp	Leu	Ser	Ile	His	His	Thr	Phe	Ser	Arg	Cys	Val	Thr	Val	
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Leu	Gly	His	Cys	Phe	Phe	Thr	Glu	Asp	Gly	Pro	Glu	Glu	Arg	Asn	Thr	
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Phe	Asp	His	Cys	Leu	Gly	Leu	Leu	Val	Lys	Ser	Gly	Thr	Leu	Leu	Pro	
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Phe	Trp	Met	Ala	Asn	Pro	Asn	Asn	Asn	Leu	Ile	Asn	Cys	Ala	Ala	Ala	
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Lys	Arg	Pro	Phe	Leu	Ser	Ile	Ile	Ser	Ala	Arg	Tyr	Ser	Pro	His	Gln	
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Asp	Ala	Asp	Pro	Leu	Lys	Pro	Arg	Glu	Pro	Ala	Ile	Ile	Arg	His	Phe	
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Pro Lys Asn Ala Gly Val Ser Asp Cys Thr Ala Thr Ala Tyr Pro Lys	
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ttc acc gag agg gct gtc gta gac gtg ccg atg ccc aag aag ctc ttt	3505
Phe Thr Glu Arg Ala Val Val Asp Val Pro Met Pro Lys Lys Leu Phe	
1150 1155 1160 1165	
ggt tct cag ctg aaa aca aag gac cat ttc ttg gag gtg aag atg gag	3553
Gly Ser Gln Leu Lys Thr Lys Asp His Phe Leu Glu Val Lys Met Glu	
1170 1175 1180	
agt tcc aag cag cac ttc ttc cac ctc tgg aac gac ttc gct tac att	3601
Ser Ser Lys Gln His Phe Phe His Leu Trp Asn Asp Phe Ala Tyr Ile	
1185 1190 1195	
gaa gtg gat ggg aag aag tac ccc agt tcg gag gat ggc atc cag gtg	3649
Glu Val Asp Gly Lys Lys Tyr Pro Ser Ser Glu Asp Gly Ile Gln Val	
1200 1205 1210	
gtg gtg att gac ggg aac caa ggg cgc gtg gtg agc cac acg agc ttc	3697
Val Val Ile Asp Gly Asn Gln Gly Arg Val Val Ser His Thr Ser Phe	
1215 1220 1225	
agg aac tcc att ctg caa ggc ata cca tgg cag ctt ttc aac tat gtg	3745
Arg Asn Ser Ile Leu Gln Gly Ile Pro Trp Gln Leu Phe Asn Tyr Val	
1230 1235 1240 1245	
gcg acc atc cct gac aat tcc ata gtg ctt atg gca tca aag gga aga	3793
Ala Thr Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser Lys Gly Arg	
1250 1255 1260	
tac gtc tcc aga ggc cca tgg acc aga gtg ctg gaa aag ctt ggg gca	3841
Tyr Val Ser Arg Gly Pro Trp Thr Arg Val Leu Glu Lys Leu Gly Ala	
299	

1265	1270	1275	
gac agg ggt ctc aag ttg aaa gag caa atg gca ttc gtt ggc ttc aaa			3889
Asp Arg Gly Leu Lys Leu Lys Glu Gln Met Ala Phe Val Gly Phe Lys			
1280	1285	1290	
ggc agc ttc cgg ccc atc tgg gtg aca ctg gac act gag gat cac aaa			3937
Gly Ser Phe Arg Pro Ile Trp Val Thr Leu Asp Thr Glu Asp His Lys			
1295	1300	1305	
gcc aaa atc ttc caa gtt gtg ccc atc cct gtg gtg aag aag aag aag			3985
Ala Lys Ile Phe Gln Val Val Pro Ile Pro Val Val Lys Lys Lys Lys			
1310	1315	1320	1325
ttg ctc gagggc			3997
Leu Leu			

<210> 136
 <211> 1327
 <212> PRT
 <213> Homo sapiens

<400> 136

Cys	Pro	Asp	Gln	Ser	Pro	Glu	Leu	Gln	Pro	Trp	Asn	Pro	Gly	His	Asp
1				5					10					15	
Gln	Asp	His	His	Val	His	Ile	Gly	Gln	Gly	Lys	Thr	Leu	Leu	Leu	Thr
			20					25					30		
Ser	Ser	Ala	Thr	Val	Tyr	Ser	Ile	His	Ile	Ser	Glu	Gly	Gly	Lys	Leu
		35					40					45			
Val	Ile	Lys	Asp	His	Asp	Glu	Pro	Ile	Val	Leu	Arg	Thr	Arg	His	Ile
	50					55					60				
Leu	Ile	Asp	Asn	Gly	Gly	Glu	Leu	His	Ala	Gly	Ser	Ala	Leu	Cys	Pro
65				70						75					80
Phe	Gln	Gly	Asn	Phe	Thr	Ile	Ile	Leu	Tyr	Gly	Arg	Ala	Asp	Glu	Gly
			85						90					95	
Ile	Gln	Pro	Asp	Pro	Tyr	Tyr	Gly	Leu	Lys	Tyr	Ile	Gly	Val	Gly	Lys
		100						105					110		
Gly	Gly	Ala	Leu	Glu	Leu	His	Gly	Gln	Lys	Lys	Leu	Ser	Trp	Thr	Phe
		115					120					125			
Leu	Asn	Lys	Thr	Leu	His	Pro	Gly	Gly	Met	Ala	Glu	Gly	Gly	Tyr	Phe
130						135					140				
Phe	Glu	Arg	Ser	Trp	Gly	His	Arg	Gly	Val	Ile	Val	His	Val	Ile	Asp
145					150					155					160
Pro	Lys	Ser	Gly	Thr	Val	Ile	His	Ser	Asp	Arg	Phe	Asp	Thr	Tyr	Arg
				165					170					175	
Ser	Lys	Lys	Glu	Ser	Glu	Arg	Leu	Val	Gln	Tyr	Leu	Asn	Ala	Val	Pro
			180					185					190		
Asp	Gly	Arg	Ile	Leu	Ser	Val	Ala	Val	Asn	Asp	Glu	Gly	Ser	Arg	Asn
	195						200					205			

Leu	Asp	Asp	Met	Ala	Arg	Lys	Ala	Met	Thr	Lys	Leu	Gly	Ser	Lys	His	210	215	220
Phe	Leu	His	Leu	Gly	Phe	Arg	His	Pro	Trp	Ser	Phe	Leu	Thr	Val	Lys	225	230	235 240
Gly	Asn	Pro	Ser	Ser	Ser	Val	Glu	Asp	His	Ile	Glu	Tyr	His	Gly	His	245	250	255
Arg	Gly	Ser	Ala	Ala	Ala	Arg	Val	Phe	Lys	Leu	Phe	Gln	Thr	Glu	His	260	265	270
Gly	Glu	Tyr	Phe	Asn	Val	Ser	Leu	Ser	Ser	Glu	Trp	Val	Gln	Asp	Val	275	280	285
Glu	Trp	Thr	Glu	Trp	Phe	Asp	His	Asp	Lys	Val	Ser	Gln	Thr	Lys	Gly	290	295	300
Gly	Glu	Lys	Ile	Ser	Asp	Leu	Trp	Lys	Ala	His	Pro	Gly	Lys	Ile	Cys	305	310	315 320
Asn	Arg	Pro	Ile	Asp	Ile	Gln	Ala	Thr	Thr	Met	Asp	Gly	Val	Asn	Leu	325	330	335
Ser	Thr	Glu	Val	Val	Tyr	Lys	Lys	Gly	Gln	Asp	Tyr	Arg	Phe	Ala	Cys	340	345	350
Tyr	Asp	Arg	Gly	Arg	Ala	Cys	Arg	Ser	Tyr	Arg	Val	Arg	Phe	Leu	Cys	355	360	365
Gly	Lys	Pro	Val	Arg	Pro	Lys	Leu	Thr	Val	Thr	Ile	Asp	Thr	Asn	Val	370	375	380
Asn	Ser	Thr	Ile	Leu	Asn	Leu	Glu	Asp	Asn	Val	Gln	Ser	Trp	Lys	Pro	385	390	395 400
Gly	Asp	Thr	Leu	Val	Ile	Ala	Ser	Thr	Asp	Tyr	Ser	Met	Tyr	Gln	Ala	405	410	415
Glu	Glu	Phe	Gln	Val	Leu	Pro	Cys	Arg	Ser	Cys	Ala	Pro	Asn	Gln	Val	420	425	430
Lys	Val	Ala	Gly	Lys	Pro	Met	Tyr	Leu	His	Ile	Gly	Glu	Glu	Ile	Asp	435	440	445
Gly	Val	Asp	Met	Arg	Ala	Glu	Val	Gly	Leu	Leu	Ser	Arg	Asn	Ile	Ile	450	455	460
Val	Met	Gly	Glu	Met	Glu	Asp	Lys	Cys	Tyr	Pro	Tyr	Arg	Asn	His	Ile	465	470	475 480
Cys	Asn	Phe	Phe	Asp	Phe	Asp	Thr	Phe	Gly	Gly	His	Ile	Lys	Phe	Ala	485	490	495
Leu	Gly	Phe	Lys	Ala	Ala	His	Leu	Glu	Gly	Thr	Glu	Leu	Lys	His	Met	500	505	510
Gly	Gln	Gln	Leu	Val	Gly	Gln	Tyr	Pro	Ile	His	Phe	His	Leu	Ala	Gly	515	520	525
Asp	Val	Asp	Glu	Arg	Gly	Gly	Tyr	Asp	Pro	Pro	Thr	Tyr	Ile	Arg	Asp	530	535	540

Leu Ser Ile His His Thr Phe Ser Arg Cys Val Thr Val His Gly Ser
 545 550 555 560
 Asn Gly Leu Leu Ile Lys Asp Val Val Gly Tyr Asn Ser Leu Gly His
 565 570 575
 Cys Phe Phe Thr Glu Asp Gly Pro Glu Glu Arg Asn Thr Phe Asp His
 580 585 590
 Cys Leu Gly Leu Leu Val Lys Ser Gly Thr Leu Leu Pro Ser Asp Arg
 595 600 605
 Asp Ser Lys Met Cys Lys Met Ile Thr Glu Asp Ser Tyr Pro Gly Tyr
 610 615 620
 Ile Pro Lys Pro Arg Gln Asp Cys Asn Ala Val Ser Thr Phe Trp Met
 625 630 635 640
 Ala Asn Pro Asn Asn Asn Leu Ile Asn Cys Ala Ala Ala Gly Ser Glu
 645 650 655
 Glu Thr Gly Phe Trp Phe Ile Phe His His Val Pro Thr Gly Pro Ser
 660 665 670
 Val Gly Met Tyr Ser Pro Gly Tyr Ser Glu His Ile Pro Leu Gly Lys
 675 680 685
 Phe Tyr Asn Asn Arg Ala His Ser Asn Tyr Arg Ala Gly Met Ile Ile
 690 695 700
 Asp Asn Gly Val Lys Thr Thr Glu Ala Ser Ala Lys Asp Lys Arg Pro
 705 710 715 720
 Phe Leu Ser Ile Ile Ser Ala Arg Tyr Ser Pro His Gln Asp Ala Asp
 725 730 735
 Pro Leu Lys Pro Arg Glu Pro Ala Ile Ile Arg His Phe Ile Ala Tyr
 740 745 750
 Lys Asn Gln Asp His Gly Ala Trp Leu Arg Gly Gly Asp Val Trp Leu
 755 760 765
 Asp Ser Cys Arg Phe Ala Asp Asn Gly Ile Gly Leu Thr Leu Ala Ser
 770 775 780
 Gly Gly Thr Phe Pro Tyr Asp Asp Gly Ser Lys Gln Glu Ile Lys Asn
 785 790 795 800
 Ser Leu Phe Val Gly Glu Ser Gly Asn Val Gly Thr Glu Met Met Asp
 805 810 815
 Asn Arg Ile Trp Gly Pro Gly Gly Leu Asp His Ser Gly Arg Thr Leu
 820 825 830
 Pro Ile Gly Gln Asn Phe Pro Ile Arg Gly Ile Gln Leu Tyr Asp Gly
 835 840 845
 Pro Ile Asn Ile Gln Asn Cys Thr Phe Arg Lys Phe Val Ala Leu Glu
 850 855 860
 Gly Arg His Thr Ser Ala Leu Ala Phe Arg Leu Asn Asn Ala Trp Gln
 865 870 875 880

Ser Cys Pro His Asn Asn Val Thr Gly Ile Ala Phe Glu Asp Val Pro
 885 890 895
 Ile Thr Ser Arg Val Phe Phe Gly Glu Pro Gly Pro Trp Phe Asn Gln
 900 905 910
 Leu Asp Met Asp Gly Asp Lys Thr Ser Val Phe His Asp Val Asp Gly
 915 920 925
 Ser Val Ser Glu Tyr Pro Gly Ser Tyr Leu Thr Lys Asn Gly Asn Trp
 930 935 940
 Leu Val Arg His Pro Asp Cys Ile Asn Val Pro Asp Trp Arg Gly Ala
 945 950 955 960
 Ile Cys Ser Gly Cys Tyr Ala Gln Met Tyr Ile Gln Ala Tyr Lys Thr
 965 970 975
 Ser Asn Leu Arg Met Lys Ile Ile Lys Asn Asp Phe Pro Ser His Pro
 980 985 990
 Leu Tyr Leu Glu Gly Ala Leu Thr Arg Ser Thr His Tyr Gln Gln Tyr
 995 1000 1005
 Gln Pro Val Val Thr Leu Gln Lys Gly Tyr Thr Ile His Trp Asp Gln
 1010 1015 1020
 Thr Ala Pro Ala Glu Leu Ala Ile Trp Leu Ile Asn Phe Asn Lys Gly
 1025 1030 1035 1040
 Asp Trp Ile Arg Val Gly Leu Cys Tyr Pro Arg Gly Thr Thr Phe Ser
 1045 1050 1055
 Ile Leu Ser Asp Val His Asn Arg Leu Leu Lys Gln Thr Ser Lys Thr
 1060 1065 1070
 Gly Val Phe Val Arg Thr Leu Gln Met Asp Lys Val Glu Gln Ser Tyr
 1075 1080 1085
 Pro Gly Arg Ser His Tyr Tyr Trp Asp Glu Asp Ser Gly Leu Leu Phe
 1090 1095 1100
 Leu Lys Leu Lys Ala Gln Asn Glu Arg Glu Lys Phe Ala Phe Cys Ser
 1105 1110 1115 1120
 Met Lys Gly Cys Glu Arg Ile Lys Ile Lys Ala Leu Ile Pro Lys Asn
 1125 1130 1135
 Ala Gly Val Ser Asp Cys Thr Ala Thr Ala Tyr Pro Lys Phe Thr Glu
 1140 1145 1150
 Arg Ala Val Val Asp Val Pro Met Pro Lys Lys Leu Phe Gly Ser Gln
 1155 1160 1165
 Leu Lys Thr Lys Asp His Phe Leu Glu Val Lys Met Glu Ser Ser Lys
 1170 1175 1180
 Gln His Phe Phe His Leu Trp Asn Asp Phe Ala Tyr Ile Glu Val Asp
 1185 1190 1195 1200
 Gly Lys Lys Tyr Pro Ser Ser Glu Asp Gly Ile Gln Val Val Val Ile
 1205 1210 1215

Asp Gly Asn Gln Gly Arg Val Val Ser His Thr Ser Phe Arg Asn Ser
 1220 1225 1230
 Ile Leu Gln Gly Ile Pro Trp Gln Leu Phe Asn Tyr Val Ala Thr Ile
 1235 1240 1245
 Pro Asp Asn Ser Ile Val Leu Met Ala Ser Lys Gly Arg Tyr Val Ser
 1250 1255 1260
 Arg Gly Pro Trp Thr Arg Val Leu Glu Lys Leu Gly Ala Asp Arg Gly
 1265 1270 1275 1280
 Leu Lys Leu Lys Glu Gln Met Ala Phe Val Gly Phe Lys Gly Ser Phe
 1285 1290 1295
 Arg Pro Ile Trp Val Thr Leu Asp Thr Glu Asp His Lys Ala Lys Ile
 1300 1305 1310
 Phe Gln Val Val Pro Ile Pro Val Val Lys Lys Lys Lys Leu Leu
 1315 1320 1325

<210> 137

<211> 619

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(603)

<400> 137

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1 5 10 15	
cgg tgc tcc ttg tgt gct gta aag acc cag gat ggt ccc aaa cct atc	96
Arg Cys Ser Leu Cys Ala Val Lys Thr Gln Asp Gly Pro Lys Pro Ile	
20 25 30	
aat ccc ctg att tgc tcc ctg caa tgc cag gct gcc ctg ctg ccc tct	144
Asn Pro Leu Ile Cys Ser Leu Gln Cys Gln Ala Ala Leu Leu Pro Ser	
35 40 45	
gag gaa tgg gag aga tgc cag agc ttt ctg tct ttt ttc acc ccc tcc	192
Glu Glu Trp Glu Arg Cys Gln Ser Phe Leu Ser Phe Phe Thr Pro Ser	
50 55 60	
acc ctt ggg ctc aat gac aag gag gac ttg ggg agc aag tcg gtt ggg	240
Thr Leu Gly Leu Asn Asp Lys Glu Asp Leu Gly Ser Lys Ser Val Gly	
65 70 75 80	
gaa ggg ccc tac agt gag ctg gcc aag ctc tct ggg tca ttc ctg aag	288
Glu Gly Pro Tyr Ser Glu Leu Ala Lys Leu Ser Gly Ser Phe Leu Lys	
85 90 95	
gag ctg aac gat ggt gcc atg gag act ggc aca ctc tat ctc gct gag	336
Glu Leu Asn Asp Gly Ala Met Glu Thr Gly Thr Leu Tyr Leu Ala Glu	
100 105 110	
gag gac ccc aag gag cag gtc aaa cgc tat ggg ggc ttt ttg cgc aaa	384
Glu Asp Pro Lys Glu Gln Val Lys Arg Tyr Gly Gly Phe Leu Arg Lys	
115 120 125	

tac ccc aag agg agc tca gag gtg gct ggg gag ggg gac ggg gat agc	432
Tyr Pro Lys Arg Ser Ser Glu Val Ala Gly Glu Gly Asp Gly Asp Ser	
130 135 140	
atg ggc cat gag gac ctg tac aaa cgc tat ggg ggc ttc ttg cgg cgc	480
Met Gly His Glu Asp Leu Tyr Lys Arg Tyr Gly Gly Phe Leu Arg Arg	
145 150 155 160	
att cgt ccc aag ctc aag tgg gac aac cag aag cgc tat ggc ggt ttt	528
Ile Arg Pro Lys Leu Lys Trp Asp Asn Gln Lys Arg Tyr Gly Gly Phe	
165 170 175	
ctc cgg cgc cag ttc aag gtg gtg act cgg tct cag gaa gat ccg aat	576
Leu Arg Arg Gln Phe Lys Val Val Thr Arg Ser Gln Glu Asp Pro Asn	
180 185 190	
gct tac tct gga gag ctt ttt gat gca taagcacttc ttttca	619
Ala Tyr Ser Gly Glu Leu Phe Asp Ala	
195 200	
<210> 138	
<211> 201	
<212> PRT	
<213> Homo sapiens	
<400> 138	
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Arg Cys Ser Leu Cys Ala Val Lys Thr Gln Asp Gly Pro Lys Pro Ile	
20 25 30	
Asn Pro Leu Ile Cys Ser Leu Gln Cys Gln Ala Ala Leu Leu Pro Ser	
35 40 45	
Glu Glu Trp Glu Arg Cys Gln Ser Phe Leu Ser Phe Phe Thr Pro Ser	
50 55 60	
Thr Leu Gly Leu Asn Asp Lys Glu Asp Leu Gly Ser Lys Ser Val Gly	
65 70 75 80	
Glu Gly Pro Tyr Ser Glu Leu Ala Lys Leu Ser Gly Ser Phe Leu Lys	
85 90 95	
Glu Leu Asn Asp Gly Ala Met Glu Thr Gly Thr Leu Tyr Leu Ala Glu	
100 105 110	
Glu Asp Pro Lys Glu Gln Val Lys Arg Tyr Gly Gly Phe Leu Arg Lys	
115 120 125	
Tyr Pro Lys Arg Ser Ser Glu Val Ala Gly Glu Gly Asp Gly Asp Ser	
130 135 140	
Met Gly His Glu Asp Leu Tyr Lys Arg Tyr Gly Gly Phe Leu Arg Arg	
145 150 155 160	
Ile Arg Pro Lys Leu Lys Trp Asp Asn Gln Lys Arg Tyr Gly Gly Phe	
165 170 175	
Leu Arg Arg Gln Phe Lys Val Val Thr Arg Ser Gln Glu Asp Pro Asn	
180 185 190	
Ala Tyr Ser Gly Glu Leu Phe Asp Ala	
305	

<210> 139
 <211> 758
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (16)..(378)

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tgc tcc ttg tgt gct gta aag acc cag gat ggt ccc aaa cct atc aat 99
 Cys Ser Leu Cys Ala Val Lys Thr Gln Asp Gly Pro Lys Pro Ile Asn
 15 20 25

ccc ctg att tgc tcc ctg caa tgc cag gct gcc ctg ctg ccc tct gag 147
 Pro Leu Ile Cys Ser Leu Gln Cys Gln Ala Ala Leu Leu Pro Ser Glu
 30 35 40

gaa tgg gag aga tgc cag agc ttt ctg tct ttt ttc acc ccc tcc acc 195
 Glu Trp Glu Arg Cys Gln Ser Phe Leu Ser Phe Phe Thr Pro Ser Thr
 45 50 55 60

ctt ggg ctc aat gac aag gag gac ttg ggg agc aag tcg gtt ggg gaa 243
 Leu Gly Leu Asn Asp Lys Glu Asp Leu Gly Ser Lys Ser Val Gly Glu
 65 70 75

ggg ccc tac agt gag ctg gcc aag ctc tct ggg tca ttc ctg aag gag 291
 Gly Pro Tyr Ser Glu Leu Ala Lys Leu Ser Gly Ser Phe Leu Lys Glu
 80 85 90

ctg gag aaa agc aag ttt tct ccc aag tat ctc aac aaa gga gaa cac 339
 Leu Glu Lys Ser Lys Phe Ser Pro Lys Tyr Leu Asn Lys Gly Glu His
 95 100 105

tct gag caa gag cct gga gga gaa gct cag ggg tct ctc tgacggggttt 388
 Ser Glu Gln Glu Pro Gly Gly Glu Ala Gln Gly Ser Leu
 110 115 120

agggaggggag cagagtctga gctgatgagg gatgcccagc tgaacgatgg tgccatggag 448

actggcacac tctatctcgc tgaggaggac cccaaggagc aggtcaaacg ctatgggggc 508

tttttgcgca aataccccaa gaggagctca gaggtggctg gggaggggga cggggatagc 568

atgggcatg aggacctgta caaacgctat gggggcttct tgcggcgcac tcgtcccaag 628

ctcaagtggg acaaccagaa gcgctatggc gggttttctcc ggcgccagtt caagggtggtg 688

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cttttcatga 758

<210> 140
 <211> 121
 <212> PRT
 <213> Homo sapiens

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<400> 140
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Ala Val Lys Thr Gln Asp Gly Pro Lys Pro Ile Asn Pro Leu Ile Cys
          20          25          30

Ser Leu Gln Cys Gln Ala Ala Leu Leu Pro Ser Glu Glu Trp Glu Arg
          35          40          45

Cys Gln Ser Phe Leu Ser Phe Phe Thr Pro Ser Thr Leu Gly Leu Asn
          50          55          60

Asp Lys Glu Asp Leu Gly Ser Lys Ser Val Gly Glu Gly Pro Tyr Ser
          65          70          75          80

Glu Leu Ala Lys Leu Ser Gly Ser Phe Leu Lys Glu Leu Glu Lys Ser
          85          90          95

Lys Phe Ser Pro Lys Tyr Leu Asn Lys Gly Glu His Ser Glu Gln Glu
          100          105          110

Pro Gly Gly Glu Ala Gln Gly Ser Leu
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<210> 141
<211> 603
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (1)..(603)

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<400> 141
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Ala Ala Cys Leu Leu Met Phe Pro Ser Thr Thr Ala Asp Cys Leu Ser
 1          5          10          15

cgg tgc tcc ttg tgt gct gta aag acc cag gat ggt ccc aaa cct atc      96
Arg Cys Ser Leu Cys Ala Val Lys Thr Gln Asp Gly Pro Lys Pro Ile
          20          25          30

aat ccc ctg att tgc tcc ctg caa tgc cag gct gcc ctg ctg ccc tct     144
Asn Pro Leu Ile Cys Ser Leu Gln Cys Gln Ala Ala Leu Leu Pro Ser
          35          40          45

gag gaa tgg gag aga tgc cag agc ttt ctg tct ttt ttc acc ccc tcc     192
Glu Glu Trp Glu Arg Cys Gln Ser Phe Leu Ser Phe Phe Thr Pro Ser
          50          55          60

acc ctt ggg ctc aat gac aag gag gac ttg ggg agc aag tcg gtt ggg     240
Thr Leu Gly Leu Asn Asp Lys Glu Asp Leu Gly Ser Lys Ser Val Gly
          65          70          75          80

gaa ggg ccc tac agt gag ctg gcc aag ctc tct ggg tca ttc ctg aag     288
Glu Gly Pro Tyr Ser Glu Leu Ala Lys Leu Ser Gly Ser Phe Leu Lys
          85          90          95

gag ctg aac gat ggt gcc atg gag act ggc aca ctc tat ctc gct gag     336
Glu Leu Asn Asp Gly Ala Met Glu Thr Gly Thr Leu Tyr Leu Ala Glu
          100          105          110

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gag gac ccc aag gag cag gtc aaa cgc tat ggg ggc ttt ttg cgc aaa	384
Glu Asp Pro Lys Glu Gln Val Lys Arg Tyr Gly Gly Phe Leu Arg Lys	
115 120 125	
tac ccc aag agg agc tca gag gtg gct ggg gag ggg gac ggg gat agc	432
Tyr Pro Lys Arg Ser Ser Glu Val Ala Gly Glu Gly Asp Gly Asp Ser	
130 135 140	
atg ggc cat gag gac ctg tac aaa cgc tat ggg ggc ttc ttg cgg cgc	480
Met Gly His Glu Asp Leu Tyr Lys Arg Tyr Gly Gly Phe Leu Arg Arg	
145 150 155 160	
att cgt ccc aag ctc aag tgg gac aac cag aag cgc tat ggc ggt ttt	528
Ile Arg Pro Lys Leu Lys Trp Asp Asn Gln Lys Arg Tyr Gly Gly Phe	
165 170 175	
ctc cgg cgc cag ttc aag gtg gtg act cgg tct cag gaa gat ccg aat	576
Leu Arg Arg Gln Phe Lys Val Val Thr Arg Ser Gln Glu Asp Pro Asn	
180 185 190	
gct tac tct gga gag ctt ttt gat gca	603
Ala Tyr Ser Gly Glu Leu Phe Asp Ala	
195 200	
<210> 142	
<211> 201	
<212> PRT	
<213> Homo sapiens	
<400> 142	
Ala Ala Cys Leu Leu Met Phe Pro Ser Thr Thr Ala Asp Cys Leu Ser	
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Arg Cys Ser Leu Cys Ala Val Lys Thr Gln Asp Gly Pro Lys Pro Ile	
20 25 30	
Asn Pro Leu Ile Cys Ser Leu Gln Cys Gln Ala Ala Leu Leu Pro Ser	
35 40 45	
Glu Glu Trp Glu Arg Cys Gln Ser Phe Leu Ser Phe Phe Thr Pro Ser	
50 55 60	
Thr Leu Gly Leu Asn Asp Lys Glu Asp Leu Gly Ser Lys Ser Val Gly	
65 70 75 80	
Glu Gly Pro Tyr Ser Glu Leu Ala Lys Leu Ser Gly Ser Phe Leu Lys	
85 90 95	
Glu Leu Asn Asp Gly Ala Met Glu Thr Gly Thr Leu Tyr Leu Ala Glu	
100 105 110	
Glu Asp Pro Lys Glu Gln Val Lys Arg Tyr Gly Gly Phe Leu Arg Lys	
115 120 125	
Tyr Pro Lys Arg Ser Ser Glu Val Ala Gly Glu Gly Asp Gly Asp Ser	
130 135 140	
Met Gly His Glu Asp Leu Tyr Lys Arg Tyr Gly Gly Phe Leu Arg Arg	
145 150 155 160	
Ile Arg Pro Lys Leu Lys Trp Asp Asn Gln Lys Arg Tyr Gly Gly Phe	
165 170 175	

Leu Arg Arg Gln Phe Lys Val Val Thr Arg Ser Gln Glu Asp Pro Asn
180 185 190

Ala Tyr Ser Gly Glu Leu Phe Asp Ala
195 200

<210> 143
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artifical Sequence: Primer/Probe

<400> 143
ctgaagcaca tcgtcatcaa c 21

<210> 144
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artifical Sequence: Primer/Probe

<400> 144
cggtttcccc tatgtgcaag tcctaa 26

<210> 145
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artifical Sequence: Primer/Probe

<400> 145
ctccacctct gagctattga tg 22

<210> 146
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artifical Sequence: Primer/Probe

<400> 146
cgtcaagatg ctcaaagaca ac 22

<210> 147
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artifical Sequence: Primer/Probe

<400> 147
ctctgacaag gacctggccg acct 24

<210> 148
<211> 21

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artifical Sequence: Primer/Probe

 <400> 148
 gatcagcttc atcacctcca t 21

 <210> 149
 <211> 17
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artifical Sequence: Primer/Probe

 <400> 149
 cgtgcgtctc tcctcca 17

 <210> 150
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artifical Sequence: Primer/Probe

 <400> 150
 cttcccaagc accagcgagg c 21

 <210> 151
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artifical Sequence: Primer/Probe

 <400> 151
 cacgtactac ctggccaaag 20

 <210> 152
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artifical Sequence: Primer/Probe

 <400> 152
 gctactggct ctttcgagaa g 21

 <210> 153
 <211> 25
 <212> DNA
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 <220>
 <223> Description of Artifical Sequence: Primer/Probe

 <400> 153
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<210> 154
 <211> 19
 <212> DNA
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 <223> Description of Artifical Sequence: Primer/Probe

 <400> 154
 cgtgtcaatg cggtcataag 19

 <210> 155
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 <400> 155
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 <210> 156
 <211> 26
 <212> DNA
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 <223> Description of Artifical Sequence: Primer/Probe

 <400> 156
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 <210> 157
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 <400> 157
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 <210> 158
 <211> 20
 <212> DNA
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 <400> 158
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 <210> 159
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<400> 159
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 <210> 160
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 <212> DNA
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 <210> 161
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 <210> 162
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 <210> 163
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 <400> 163
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 <210> 164
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 <400> 164
 cctggaaata gggtaccaga ag 22

 <210> 165
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 <400> 165
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 <210> 166
 <211> 20
 <212> DNA
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 <400> 166
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 <210> 167
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 <210> 168
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 <210> 170
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<211> 23
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 <400> 171
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 <210> 172
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 <210> 173
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 <400> 173
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 <210> 174
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 <400> 174
 cagaaacaca aatgaaaatc ctcagga 27

 <210> 175
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 <400> 175
 tgtcagtagc tttgatgcat tg 22

 <210> 176
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 <400> 176

atacacagac gcgctcaca

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<210> 177

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artifical Sequence: Primer/Probe

<400> 177

ctccctcact cgaacacaca gacaca

26

<210> 178

<211> 20

<212> DNA

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<223> Description of Artifical Sequence: Primer/Probe

<400> 178

ggagagcgaa gtgtgtgtgt

20

<210> 179

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Description of Artifical Sequence: Primer/Probe

<400> 179

ctgaggatca caaagccaaa

20

<210> 180

<211> 26

<212> DNA

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<223> Description of Artifical Sequence: Primer/Probe

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<210> 181

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<210> 182

<211> 20

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<220>

<223> Description of Artifical Sequence: Primer/Probe

<400> 182
cctgaaggag ctgaacgatg 20

<210> 183
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artifical Sequence: Primer/Probe

<400> 183
ccatggagac tggcacactc tatctc 26

<210> 184
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artifical Sequence: Primer/Probe

<400> 184
tagcgtttga cctgctcctt 20

<210> 185
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artifical Sequence: Primer/Probe

<400> 185
taaaggtctc cacagagttt atgcatatt 30

<210> 186
<211> 30
<212> DNA
<213> Artificial Sequence

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<223> Description of Artifical Sequence: Primer/Probe

<400> 186
atgctgtgaa cgagtgtgat attactgaat 30

<210> 187
<211> 30
<212> DNA
<213> Artificial Sequence

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<223> Description of Artifical Sequence: Primer/Probe

<400> 187
acttatagcg tttcctcctc gaaattctac 30